The IBIS Manual
A Short Course in IBIS Methodology

(adapted from http://www.touchstone.com/wp/IBIS.html)

Introduction

The purpose of this manual is to explain the rules of the IBIS method, to convey a sense of the power, simplicity, and ease of use of the method and, most importantly, to give the reader confidence that he or she can use the IBIS method to sharpen and organize the exploration of virtually any topic. For anyone serious about mastering IBIS we strongly recommend taking GDSS's Creating Collaborative Meetings course, which teaches the practical skills of working with IBIS in meetings and other high-stakes situations.

IBIS (pronounced "eye-bis") stands for Issue-Based Information System, and was developed by Horst Rittel and colleagues during the early 1970's. IBIS was developed to provide a simple yet formal structure for the discussion and exploration of "wicked" problems. Problems that are wicked, as opposed to tame, do not yield to the traditional "scientific" approach to problem solving, which is to gather data, analyze the data, formulate a solution and implement the solution. With a wicked problem your understanding of the problem is evolving as you work on a solution. One sure sign of a wicked problem is that there is no clear agreement about what the "real problem" is (see the section "How to Tell if a Problem is Wicked"). Wicked problems cannot be solved in the traditional sense, because one runs out of resources (time, money, energy, people, etc.) before a perfect solution can be implemented.

This was the environment IBIS was developed to work within. It is an environment of multiple parties with differing views about the problem, differing values and beliefs, little in the way of "hard data," and time pressure for a resolution. The method is powerful because it supports dialogue among the stakeholders in the problem, and it is only through such dialog that the necessary shared models can emerge. It works because it is simple enough that it does not get in the way of the discourse, yet it provides a simple framework in which the key logical elements of the discourse can be understood and shared.

IBIS was never strictly defined by its inventors -- it was an evolving standard for them. One of the greatest drawbacks of the IBIS method historically was that it was relatively easy for an IBIS discussion to overwhelm any manual system for keeping track of all the issues and their logical relationships. This approach was developed after 10 years of research and testing as a computer-based tool that would support IBIS discussions regardless of the number of people or the duration of the discussion. As part of this research and field testing the IBIS method itself was refined; the method as presented here is the result of that experience.

As you work with IBIS you will come to appreciate that they make explicit a dimension of communication which normally remains obscured: the moves in a conversation which open the conversation up versus those which close a conversation down. Indeed, one of the most significant benefits of IBIS is the extent to which using it can, over time, lead users to more skillful and creative teamwork and communication. It does this by demonstrating the power of asking questions which open conversations up and invite thoughtful and creative participation by all. Using IBIS also reveals the extent to which important conversations can be "closed down" by statements that, on the surface, appear fine and normal. The secret is in focusing on the asking of questions, and in how these questions are framed.

IBIS Fundamentals

The key to the power of IBIS is that it is issue-based, but this is also one of the hardest things about it to master. Being issue-based means that whenever there is any misunderstanding or disagreement, the first move is to frame the misunderstanding or disagreement as an issue, or, more precisely, as a question. The creation of the question turns the "argument" into an inquiry

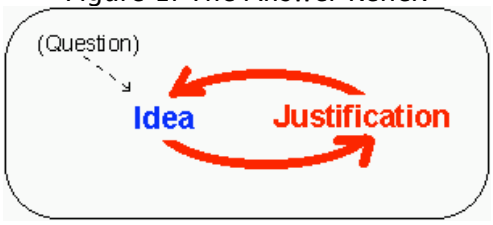
-- a dialogue in which the underlying goal is to open up to new possibilities and the mood becomes one of partnership. While this may seem simple and straightforward, in practice finding the best question to ask is an art form.

The Answer Reflex

Why is it that framing conversations in terms of questions is so difficult to master? One reason we have found is that Western society and the educational system seem to have rather thoroughly trained us to always know and say the right answer, and to avoid the vague and weak position of simply asking an open-ended question in a discussion. In other words, the result of years of practice is that most people have a very effective "Answer Reflex," which is the source of the commonly heard discussions of the "Yes, it is!" - "No, it isn't!" variety.

In a discussion, the original question is quickly overwhelmed by a flurry of countermanding ideas -- proposals, answers, or solutions of some kind -- and tightly bound to those ideas are their justifications. Each justification in turn gives rise to new ideas, each of which has its own justification (see Figure 1). A well-functioning Answer Reflex assures that no one asks "What is the question here?"

Figure 1: The Answer Reflex



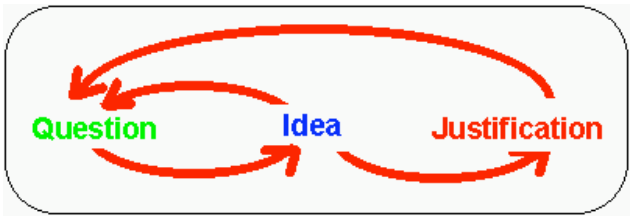
This is not to say that people don't frequently ask questions. Indeed, to be a skillful politician or rhetoritician is to make effective use of the interrogative form. However, "rhetorical" questions (e.g. "Do we want another four years of inflation in this country?" or "Are you always this dense?") neither open the dialogue nor foster a mood of inquiry -- they are simply a kind of position or assertion with a question mark on the end, and are very much a part of the Answer Reflex.

Buckminster Fuller described the Answer Reflex as the "Mistake Mystique": the tendency to avoid both the risk of being wrong and the vulnerability of not knowing by always "knowing the right answer." He pointed out that while this may have been a good strategy for success in our educational system, it has done enormous damage to our ability as a nation to think powerfully and creatively about the complex problems that now face us.

The Power of IBIS

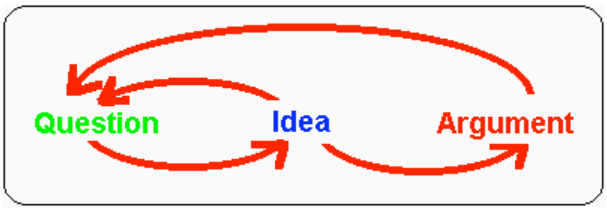
The power of IBIS is that it moves the asking of questions into a central role in the dialogue process (see Figure 2). In IBIS, ideas are always defined relative to some question. This makes it somewhat more difficult for discussions to devolve to the "Yes, it is!" - "No, it isn't!" cycle, and it creates a discipline of care and rigor about being relevant. Since comments are more naturally addressed to an explicit statement of the question, it becomes more obvious when a discussion has the character of a "Yes, A!" - "No, not B!" cycle, in which two people are vociferously stating non-opposing propositions. (Here, "A" represents a statement like "The product must have quality" and "not B" represents a statement like "The product must not cost a lot.")

Figure 2: The Answer Reflex is broken by interposing Questions



While IBIS has the same elements as the Answer Reflex, it puts a different priority on them. All discussions start with a question. Possible answers (called "Ideas") are clearly stated in response. Justifications (called "Arguments") are added to the ideas and can be either supporting or objecting to the idea (see Figure 3). As the arrows pointing back toward "Question" suggest, both Ideas and Arguments can easily give rise to new, deeper Questions.

Figure 3: The IBIS Model



It has been our experience over the years that knowing about the IBIS method is very different from practicing it naturally. The old habits die hard, particularly in the heat of meetings and conversations in which critical decisions are being made. Having a high quality dialogue sometimes seems less important than having the "right answer" be accepted by the group. But most of us would acknowledge that the habits of dialogue (based on the Answer Reflex) that we bring to these meetings are perhaps at the very source of the pervasive frustration about the amount of time spent in meetings and the lack of real effectiveness in them.

Sometimes you have to work slower in order to work faster. It is common in sports and the arts to slow down the performance of an activity in order to observe and improve it. Effective team dialogue is such an activity. The intent of this manual is in part to encourage the reader toward a lifelong pursuit of excellence in communication and teamwork, and in part a first lesson in the "language" of issue-based dialogue, which, like any language, can only be mastered through practice. Fortunately, you will have an environment for the discipline of dialogue, and a virtual "land" where everyone speaks the IBIS language.

The Heart of IBIS: Questions, Ideas, and Arguments

The heart of IBIS is the matrix of Questions, Ideas, and Arguments that combine together to create a conversation.

- Question -- states a question;
- Idea -- proposes a possible resolution for the question; and
- Argument -- states an opinion or judgment that either supports or objects to one or more Ideas.

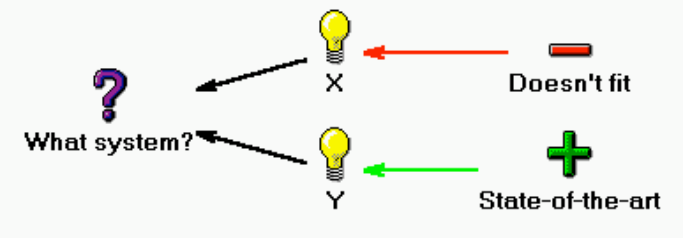
All conversations in IBIS start with a root Question. This will generally be something like "What should be our strategic plan for the next 5 years?" or "How can we increase customer 'delight' in our products and services?".

The response to a Question is one or more Ideas which provide a brief, neutral proposal for resolution of the Question. Ideas are linked to their Questions with "responds to" links. Ideas present a challenge to new users because of the great tendency, described above as the Answer Reflex, to bundle the justification for the Idea into the proposal itself. For example, "We should provide a toll free Customer Support Number because it is more inviting for customers to use." This is a critical error because the justification (the "because" part) has a natural and important

place in the IBIS structure as a supporting Argument node. To combine it in the idea, however, makes it difficult to add other argument nodes to the idea and to thoroughly explore its pros and cons.

An Argument is a statement or opinion which either supports or objects to one or more Ideas. Arguments are the place -- indeed, the only place -- in the IBIS method for opinion, clever rhetoric, and hand waving. Of course, it is preferable to have Arguments which provide factual assertions bearing on the advantages or disadvantages of an Idea. The IBIS method considerably raises the quality of dialogue within a group or project team simply by concentrating opinions into Argument nodes. For example, the old trick of "truth by repetition" -- saying one's point over and over until everyone else accedes -- is disarmed, because once an Argument has been posted it becomes silly and obvious to repeat its contents. Arguments are linked to their Ideas with links (see Figure 4) called "supports" (for pros) and "objects to" (for cons).

Figure 4. A simple IBIS map and its text version



A text version of the above:

1. Question: "What system should we buy?"
    1.1 Idea: "X"
        1.1.1 Con (Objects to): Doesn't fit w/ existing tools
    1.2 Idea: "Y"
        1.2.1 Pro (Supports): State-of-the-art Technology

The question in Figure 4 deals with the choice of a new computer system. Two possible solutions have been offered so far, X and Y. X has the objection that it doesn't fit with existing tools, and Y is supported by the claim that it is state-of-the-art technology. Notation: the icons represent IBIS nodes (e.g. the "?" stands for "Question"); since Ideas can only respond to Questions, the links from the Ideas to the Questions are understood to be responds to links; the minus sign ("-") above the upper Argument link indicates an objects to link type; and the plus sign ("+") indicates a supports link.

Subtleties of IBIS

The IBIS method is deceptively simple. It would seem that with 5 minutes of study one could jump into a complex problem and start framing Questions, Ideas, and Arguments. After all, it's really just questions and answers, pros and cons, right? What can be so hard about that? The only hard thing, really, is that IBIS is a "conversational model" which differs somewhat from the conversational model in which we are all already lifelong "experts" -- the Answer Reflex described above -- so one must unlearn this comfortable and familiar model in order to be fluent in IBIS.

In particular, there are two mistakes that most IBIS beginners make. The first is putting more than one point into a node. The value of IBIS diminishes quickly if there is more than one question in a Question node (e.g. "How should complaints be handled, and who should handle them?"), or more than one proposal in an Idea node (e.g. "Get a new advertising firm and downsize the marketing department.") The problem is not that it is hard to create such nodes. The problem is that it is very difficult for other users to respond to them properly. If there are several questions within a Question, which one is any given Idea addressing? If an Idea has multiple proposals, an Argument might object to one and support the other at the same time -- what kind of link would you use for that?

The second common mistake is putting a point into the wrong kind of node. For example, putting a Question in an Idea, or using a Question node for a general announcement. Again, the problem here is that a few such mistakes can literally grind an IBIS discussion to a halt. Such methodological rule violations sometimes seem insignificant to users in the thick of a discussion ("Everyone can see what I wrote -- what the heck difference does it make what kind of node it's in?!?"). But the rules of IBIS are not arbitrary. They provide a framework in which all of the players can keep contributing their ideas, examining their own assumptions, and seeking together to find the real issues. As a user you will not only be learning the rules of the game, you will also be called upon to be a referee and coach for the other users on the team. This will assure that methodological errors do not derail the conversation process.

Once you have become adept at the IBIS method you will find that most conversations can be seen to consist mostly of Questions, Ideas, and Arguments. Usually the Questions are implicit, and the Ideas and Arguments are bundled pretty tightly together, but there is little else being said besides the core IBIS trilogy. This is actually a remarkable statement! We are saying that even the most sophisticated planning, analysis, and design conversations, no matter how complex the subject, are conducted by an exchange of Questions, Ideas, and Arguments. For this reason we sometimes refer to these three conversational items as the "Bohr model of the rhetorical atom."

In the first part of this century Niels Bohr proposed that all matter was composed of atoms, and that atoms had a fine structure consisting of three fundamental particles: electrons, protons, and neutrons. All of the elements in the newly emerging atomic table could be accounted for in terms of their subatomic configuration of these three particles. Similarly, we have found that the "elements" of planning, design, and analytical discussions are made up of the three "particles" of the IBIS method. This is why there is no limit to the problems that can be tackled using IBIS.

Some Notes on Style

We would like to recommend some initial practices which, though they may seem minor, will help to reduce the amount of "friction" in the early phases of the group's evolution of its own practices and culture.

Title/name node labels. IBIS conversations are conducted by a group of users collaboratively constructing a map of the problem by creating nodes and links. Each node icon has a Label attached to it. Node Labels that are well done allow both the author and other users to quickly review a conversation. Labels should summarize the Detail as succinctly as possible. Thus if the Detail is "How can we improve our department's customer service?," some possible Labels are:

* How to improve service? Good.
* Better customer service? Also good.
* Improve customer service? Also good.
* Customer service? OK, but ambiguous.
* How can we? Poor.
* Improve? Poor -- too brief.
* Our department's customer service? Too long.

For beginning users, it is generally advisable to start by writing the Subject of a node, and then go back and give it a Label. With practice one can often start with the Label (but even experts have to occasionally go back and "tune" a node Label to make it clear and concise).

Content Fields. The Content field of a node is the place for a one or two sentence statement of the node Label. It is best to write this as a well-formed, if short, paragraph. One of the most common errors of beginning users is the tendency to have long rambling Subject/Detail fields. These long texts are usually an indication that the author has included information that would be much better placed in separate nodes. (On the other hand, it is important to include enough background information in these fields to make them intelligible -- where the fine line between too long and not long enough gets drawn in practice is a matter of style and convention.)

Some Guidelines For Effective Dialogues

This section explores some simple "rules" for stating Questions effectively, even powerfully. The rules are not absolute, but they reflect years of observing the kinds of questions that lead to high quality dialogues and, conversely, the kinds of questions that can derail or stop a conversation.

Rule 1: The Simplicity Rule

The statement of a Question should be simple and concise. It should not contain possible answers. It should avoid the words "and", "or", or "not".

Using IBIS makes a conversation more precise, but to gain this benefit one must be careful not to group several ideas into one node, even if they seem very similar. In practice, this means that what at first seems like a single Question sometimes ends up being two or three related Questions. Don't hesitate to create several Questions as a way of understanding a problem. They can always be folded together later on, and in a shared conversation space this is much easier to do than breaking an overloaded Question apart after people have started responding to it.

Example 1.1:
Instead of:
1. Question: What should we do about X and who should do it?
[Contains 2 questions.]

Use:
1. Question: What should we do about X?
    1.1 Idea: Appoint someone to study it.
        2. Question: Who should do it? (Expands-on Idea 1.1)

Repair procedure:
Create separate question nodes.

Rule 2: The Open Question Rule

The statement of a Question should be open, so that any number of possible solutions can be offered as Ideas. In particular, avoid "Yes/No" Questions, and Questions that follow the pattern "Should we do X or Y?". One of the benefits of IBIS is to expose unconsidered possibilities, but this benefit is eliminated if the Question is not asked in an open-ended way. Our experience has been that Yes/No and multiple choice questions nearly always close a conversation down.

Example 1.2:
Instead of:
1. Question: Isn't X too expensive? [Implies the answer.]

Use:
1. Question: Is X too expensive? [OK] or

1. Question: What is the cost of X? [Best]

Repair procedure:
State the question in a neutral way (without the "not").

Yes/No questions are a special case of multiple choice questions in which there is only one choice and it must either be confirmed or denied. In general Yes/No questions begin with either "should" or some form of "be" or "does". Here are some examples of Yes/No type questions:

* Should we do X? (or ... have X?, ... be X?)

* Does X happen?
* Do we want to do X?
* Can X be done?
* Is X the case? (or ... best?, ... correct?, ... optimal?)
* Does X matter?
* Is X the same as Y?
* Do we know X?

Now, it would be an overstatement to say that Yes/No questions should never be posed. There are infrequent cases where this is a valid form. The point of this rule is that the occasions when this form is needed are far fewer that the occasions when it naturally springs to mind. Recall that one function of the Answer Reflex is control. What better way for someone to control a dialogue than to restrict the range of options to those that suit them?

Example 2.1:
Instead of:
1. Question: Should we do X to solve problem Y?

Use:
1. Question: How should we solve problem Y?
    1.1 Idea: Do X.

Repair procedure:
Move the built-in solution ("X") into an Idea and reframe the Question so the Idea responds to it.

For those cases where a Yes/No question is appropriate, avoid the use of "maybe" and "don't know" kinds of Ideas, since these are not real answers to the question and will invite further IBIS problems.

Multiple choice questions are also framed in a closed way, that is, they contain several "answers" but they look like a question (see also Rule 3 -- The Embedded Solution Rule). These are a little easier to spot, because they contain a whole list of solutions. Multiple choice questions are also easier to reframe into open ended questions. In general, questions that begin with the "wh" words ("what", "where", "when", "who", and "why") create the opportunity for the most open type of response. Questions starting with "how" are also nearly always open.

Example 2.2:
Instead of:
1. Question: Should we do X or Y?

Use:
1. Question: What should we do?
    1.1 Idea: Do X.
        1.2 Idea: Do Y.

Repair procedure:
Reframe the question using a "wh" word and move the possible solutions into Ideas.

Indeed, there is often a pattern to IBIS Questions in design or planning conversations. The root Question asks, in some way, "What is the overall problem?" (or "goal" or "desired result", etc.) and the Ideas which respond to that Question offer possible formulations of the problem. For each of these Ideas, it is appropriate to ask, in some way, "How can this problem be solved?". The Ideas which respond to this second Question offer solutions, and of course there will be arguments for and against these solutions. Each of these solutions can be regarded as a new problem, to be explored with "wh" questions such as "What is needed for X?", "What capabilities should X have?", "What should X do?", etc.

Thus there is a natural alternation between questions which ask "What should be done?" and those which ask "How should it be done?". Chains of these Questions can be used to explore and analyze a problem at any depth.

Rule 3: The Embedded Solution Rule

The statement of a Question should not contain elements of any potential solution or answer. This rule formalizes several guidelines mentioned above. If "S" is an element of the Solution of a problem, avoid Questions such as "Should we do S?" or "Is S needed?" which have solution or action S built into them. Instead, abstract out the Problem to be solved (e.g. "P") and ask "How to solve P?" or "How to improve P?". Then, create a responding Idea containing the proposed solution S.

Example 3.1:
Instead of
1. Question: Is there a need for a Public Relations effort?
    1.1 Idea: Yes
        1.2 Idea: No

Use:
1. Question: How can we improve client relations? (or public relations?)
    1.1 Idea: "Public Relations Effort"
        1.2 Idea: "Client Advocate Team"
            1.3 Idea: "Use surveys"

Repair procedure:
Move the built-in solution ("X") into a n Idea and reframe the Question so the Idea responds to it.

This approach has two benefits. First, Arguments for and against the "solution" can be easily provided when it is an Idea. More importantly, if there are other possibilities (such as a Client Advocate Team, or the use of surveys) they can be other responses to the Question, instead of having to be suggested someplace else in the discussion.

The next example (Example 3.2) illustrates that questions which begin with "should" (e.g. "Should we do X?", "Should X be done?", "Should we have an X?", etc.) nearly always contain the solution (the "X") and ask, in essence, "Given X, what should we do?" When you already have an idea or solution in mind (as one often does), it is best to ask a question that allows you to propose your idea as one solution. Thus it is usually preferable to ask a simpler, more open ended question, such as "What should we do?".

Example 3.2:
Instead of
1. Question: 1. Question: Should we do an X project? [Contains an answer, the "X project".]
    1.1 Idea: Yes
        1.2 Idea: No

Use:
1. Question: Question: What project should we do?
    1.1 Idea: X project

Repair procedure:
Change the question to start with a "wh" question word. Then propose the built in solution as an explicit Idea.

The next example (Example 3.3) builds on the previous one to make an additional point. Recall that the Answer Reflex consists of an idea and its justification (see Figure 1). Often the justification (e.g. "because it is cheaper") masks a hidden understanding of the problem (e.g. "costs must be minimized"). It is very good IBIS form to raise a question about what the problem is, thus allowing you to make your understanding of the problem explicit. As Example 3.3 shows, the innocent phrase "to assess client needs" in the first part has been repaired in the second part to make an explicit Question about the problem. In other words, if part of the

reason for doing an "X project" is that it helps "assess client needs," then there may be other aspects of client relations which need to be explored.

Example 3.3:
Instead of:
1. Question: Should we do an X project to assess client needs? [Contains an answer and some description and support for that answer.]

Use:
1. Question: What client satisfaction problems do we have?
    1.1 Idea: Unknown Client Needs
        2 Question: How can we assess client needs? (Expands-on Idea 1.1)
            2.1 Idea: X project

Repair procedure:
Reframe the question using a "wh" word to make the discovery of the problem its own question. Then for each problem, use a "how" question to explore possible solutions.

As a side note, one technique for dealing with a "hot idea" is to go ahead and create an unconnected Idea for it. Once you have a well-formed Idea (and perhaps even some supporting arguments), you can go back and create the Question for which the Idea is a response. This technique frees you to capture ideas in a comfortable and familiar manner, but still leads to a well-formed IBIS discussion.

Rule 4: The No Benefits Rule

The statement of a Question should not ask for the benefits or disadvantages of a situation or solution. IBIS provides a specific place for pros and cons -- in Arguments. If the Question asks for pros and cons then they will be stated as Ideas, which will confuse and distort the conversation.

Example 5.1:
Instead of:
1. Question: What are the benefits of switching to X?
    1.1 Idea: Cheaper
        1.2 Idea: Faster

Use:
1. Question: What should we switch to?
    1.1 Idea: X
        1.1.1 Argument: Cheaper (supports Idea 1.1)
            1.1.2 Argument: Faster (supports Idea 1.1)

Repair procedure:
Move the embedded solution into its own Idea, and move any benefit or disadvantage Ideas into Arguments, with the appropriate links.