

Information Gathering: Interactive Methods

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Systems Analysis and Design
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Objectives

- Recognize the value of interactive methods for information gathering
- Construct interview questions to elicit human information requirements
- Structure interviews in a way that is meaningful to users
- Understand the concept of JAD and when to use it
- Write effective questions to survey users about their work
- Design and administer effective questionnaires

Interactive Methods to Elicit Human Information Requirements

- Interviewing
- Joint application design (JAD)
- questionnaires

Major Topics

- Interviewing
 - Interview preparation
 - Question types
 - Arranging Questions
 - The interview report
- Joint Application Design (JAD)
 - Involvement
 - location
- Questionnaires
 - Writing questions
 - Using Scales
 - Design
 - Administering

Interview Preparation

- Reading background material
- Establishing interview objectives
- Deciding whom to interview
- Preparing the interviewee
- Deciding on question types and structure

Question Types

- Open-ended
- Closed

Open-Ended Questions

- Open-ended interview questions allow interviewees to respond how they wish, and to what length they wish
- Open-ended interview questions are appropriate when the analyst is interested in breadth and depth of reply

Open-Ended Interview Questions

- What's your opinion of the current state of business-to-business ecommerce in your firm?
- What are the critical objectives of your department?
- Once the data are submitted via the Web site, how are they processed?
- Describe the monitoring process that is available online.
- What are some of the common data entry errors made in this department?
- What are the biggest frustrations you've experienced during the transition to ecommerce?

Advantages of Open-Ended Questions

- Puts the interviewee at ease
- Allows the interviewer to pick up on the interviewee's vocabulary
- Provides richness of detail
- Reveals avenues of further questioning that may have gone untapped

Advantages of Open-Ended Questions (Continued)

- Provides more interest for the interviewee
- Allows more spontaneity
- Makes phrasing easier for the interviewer
- Useful if the interviewer is unprepared

Disadvantages of Open-Ended Questions

- May result in too much irrelevant detail
- Possibly losing control of the interview
- May take too much time for the amount of useful information gained
- Potentially seeming that the interviewer is unprepared
- Possibly giving the impression that the interviewer is on a "fishing expedition"

Closed Interview Questions

- Closed interview questions limit the number of possible responses
- Closed interview questions are appropriate for generating precise, reliable data that is easy to analyze
- The methodology is efficient, and it requires little skill for interviewers to administer

Closed Interview Questions

- How many times a week is the project repository updated?
- On average, how many calls does the call center receive monthly?
- Which of the following sources of information is most valuable to you?
 - Completed customer complaint forms
 - Email complaints from consumers who visit the Web site
 - Face-to-face interaction with customers
 - Returned merchandise
- List your top two priorities for improving the technology infrastructure.
- Who receives this input?

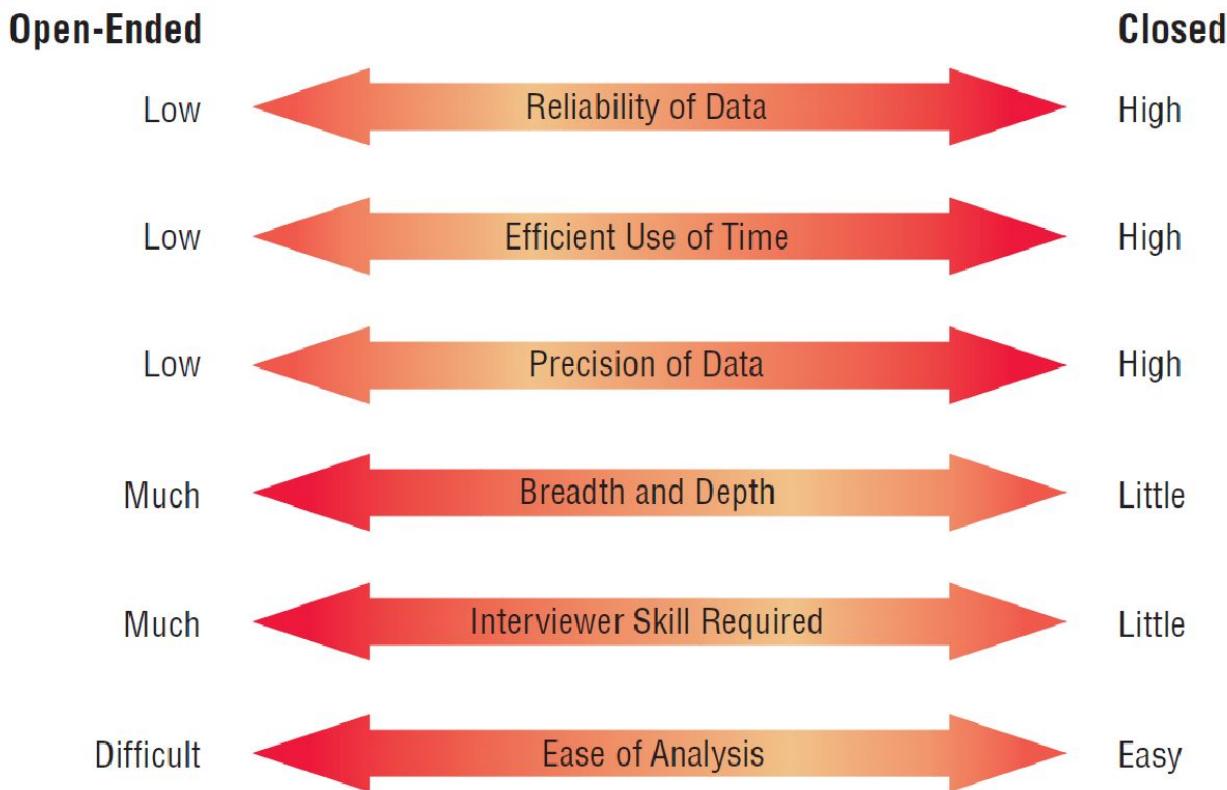
Benefits of Closed Interview Questions

- Saving interview time
- Easily comparing interviews
- Getting to the point
- Keeping control of the interview
- Covering a large area quickly
- Getting to relevant data

Disadvantages of Closed Interview Questions

- Boring for the interviewee
- Failure to obtain rich detailing
- Missing main ideas

Figure 4.5 Attributes of Open-ended and closed questions



Bipolar Questions

- Bipolar questions are those that may be answered with a 'yes' or 'no' or 'agree' or 'disagree'
- Bipolar questions should be used sparingly
- A special kind of closed question

Bipolar Interview Questions

- Do you use the Web to provide information to vendors?
- Do you agree or disagree that ecommerce on the Web lacks security?
- Do you want to receive a printout of your account status every month?
- Does your Web site maintain a FAQ page for employees with payroll questions?
- Is this form complete?

Probes

- Probing questions elicit more detail about previous questions
- The purpose of probing questions is:
 - To get more meaning
 - To clarify
 - To draw out and expand on the interviewee's point
- May be either open-ended or closed

Probes

- Why?
- Give an example of how ecommerce has been integrated into your business processes.
- Please give an illustration of the security problems you are experiencing with your online bill payment system.
- You mentioned both an intranet and an extranet solution. Please give an example of how you think each differs.
- What makes you feel that way?
- Tell me step by step what happens after a customer clicks the “Submit” button on the Web registration form.

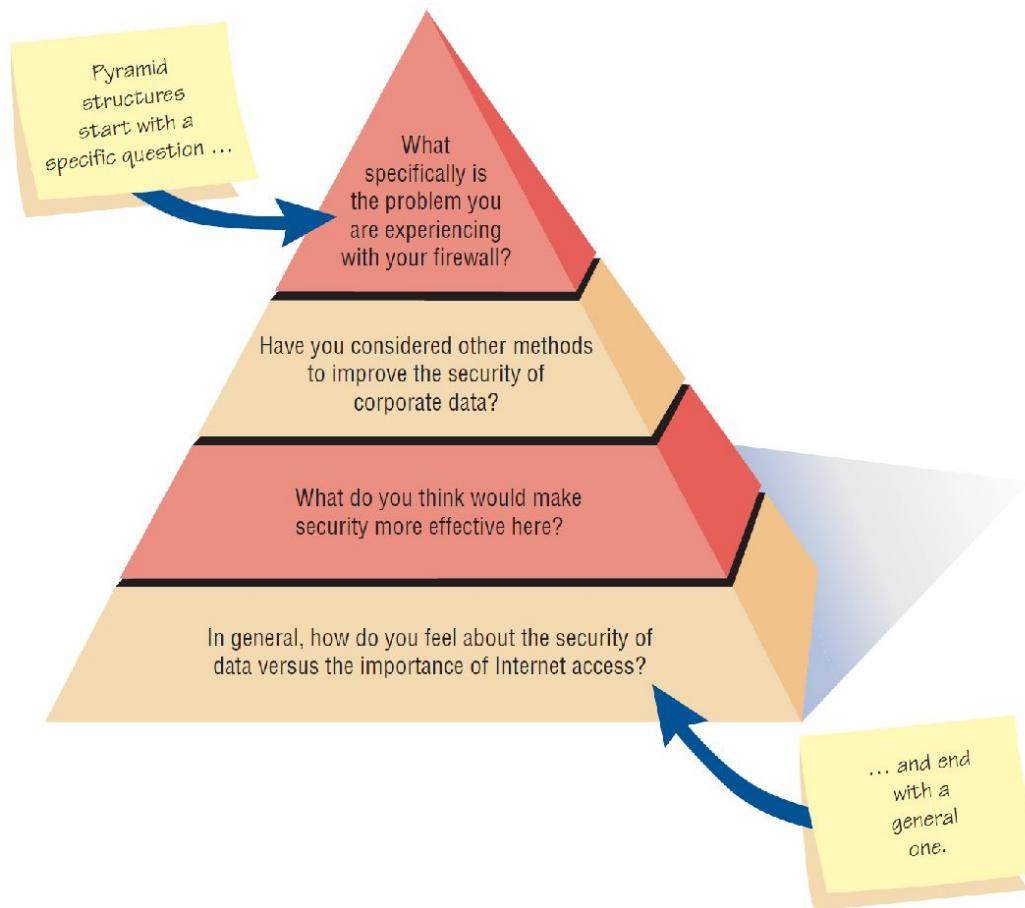
Arranging Questions

- Pyramid
 - starting with closed questions and working toward open-ended questions
- Funnel
 - starting with open-ended questions and working toward closed questions
- Diamond
 - starting with closed, moving toward open-ended, and ending with closed questions

Pyramid Structure

- Begins with very detailed, often closed questions
- Expands by allowing open-ended questions and more generalized responses
- Is useful if interviewees need to be warmed up.

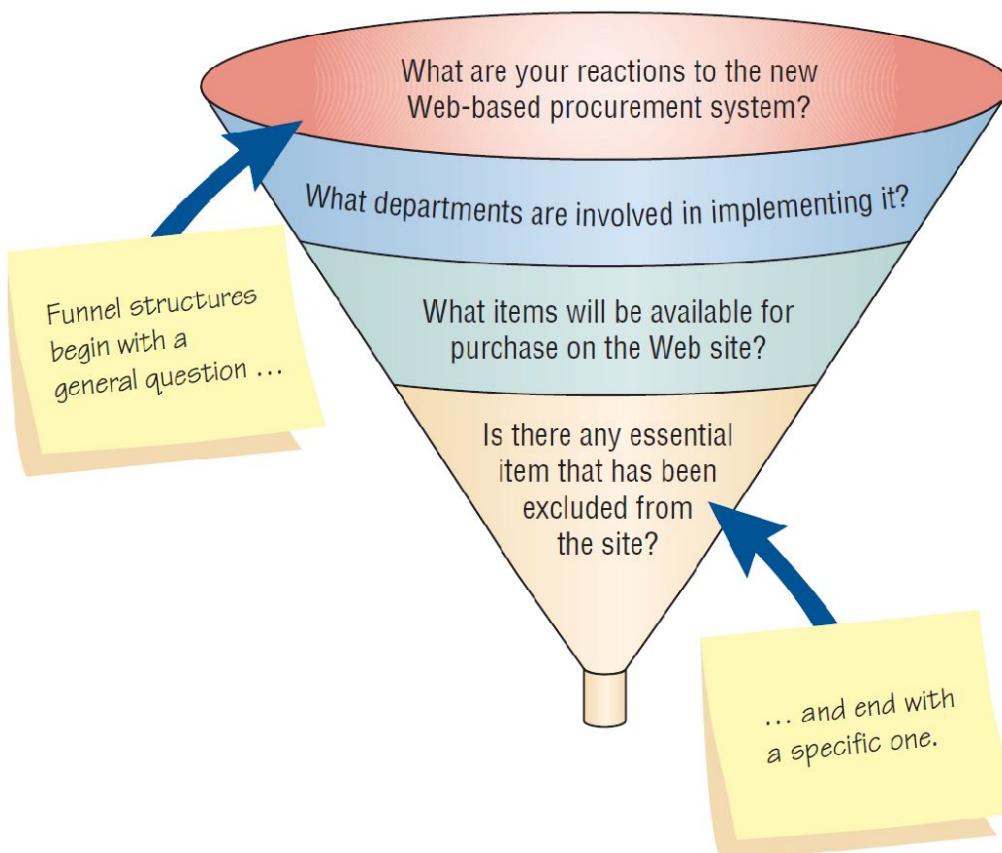
Figure 4.7 Pyramid structure for interviewing goes from specific to general questions



Funnel Structure

- Begins with generalized, open-ended questions
- Concludes by narrowing the possible responses using closed questions
- Provides an easy, non-threatening way to begin an interview

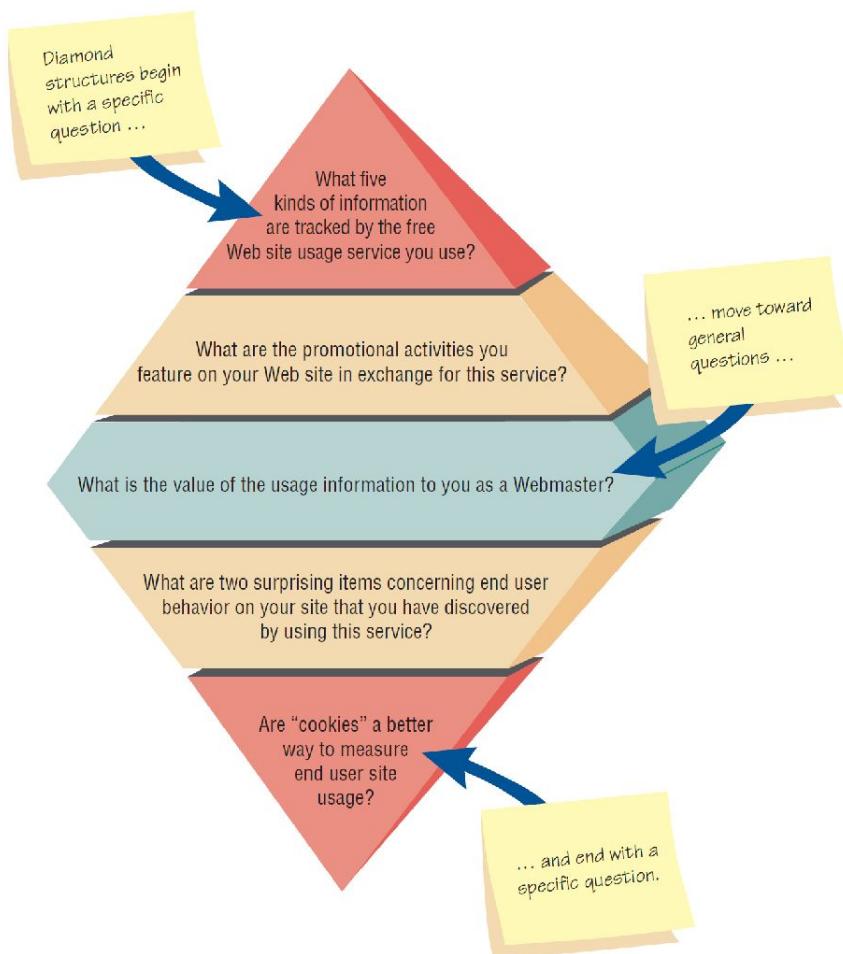
Figure 4.8 Funnel structure for interviewing begins with broad questions then funnels to specific questions



Diamond Structure

- A diamond-shaped structure begins in a very specific way
- Then more general issues are examined
- Concludes with specific questions
- Combines the strength of both the pyramid and funnel structures
- Takes longer than the other structures

Figure 4.9 Diamond-shaped structure for interviewing combines the pyramid and funnel structures



Closing the Interview

- Always ask “Is there anything else that you would like to add?”
- Summarize and provide feedback on your impressions
- Ask whom you should talk with next
- Set up any future appointments
- Thank them for their time and shake hands

Interview Report

- Write as soon as possible after the interview
- Provide an initial summary, then more detail
- Review the report with the respondent

Joint Application Design (JAD)

- Joint Application Design (JAD) can replace a series of interviews with the user community
- JAD is a technique that allows the analyst to accomplish requirements analysis and design the user interface with the users in a group setting
- Developed by IBM.

Conditions that Support the Use of JAD

- Users are restless and want something new
- The organizational culture supports joint problem-solving behaviors
- Analysts forecast an increase in the number of ideas using JAD
- Personnel may be absent from their jobs for the length of time required

Who Is Involved

- Executive sponsor
- IS Analyst
- Users
- Session leader
- Observers
- Scribe

Benefits of JAD

- Time is saved, compared with traditional interviewing
- Rapid development of systems
- Improved user ownership of the system
- Creative idea production is improved

Drawbacks of Using JAD

- JAD requires a large block of time to be available for all session participants
- If preparation or the follow-up report is incomplete, the session may not be successful
- The organizational skills and culture may not be conducive to a JAD session

Questionnaires

Questionnaires are useful in gathering information from key organization members about:

- Attitudes
- Beliefs
- Behaviors
- Characteristics

Planning for the Use of Questionnaires

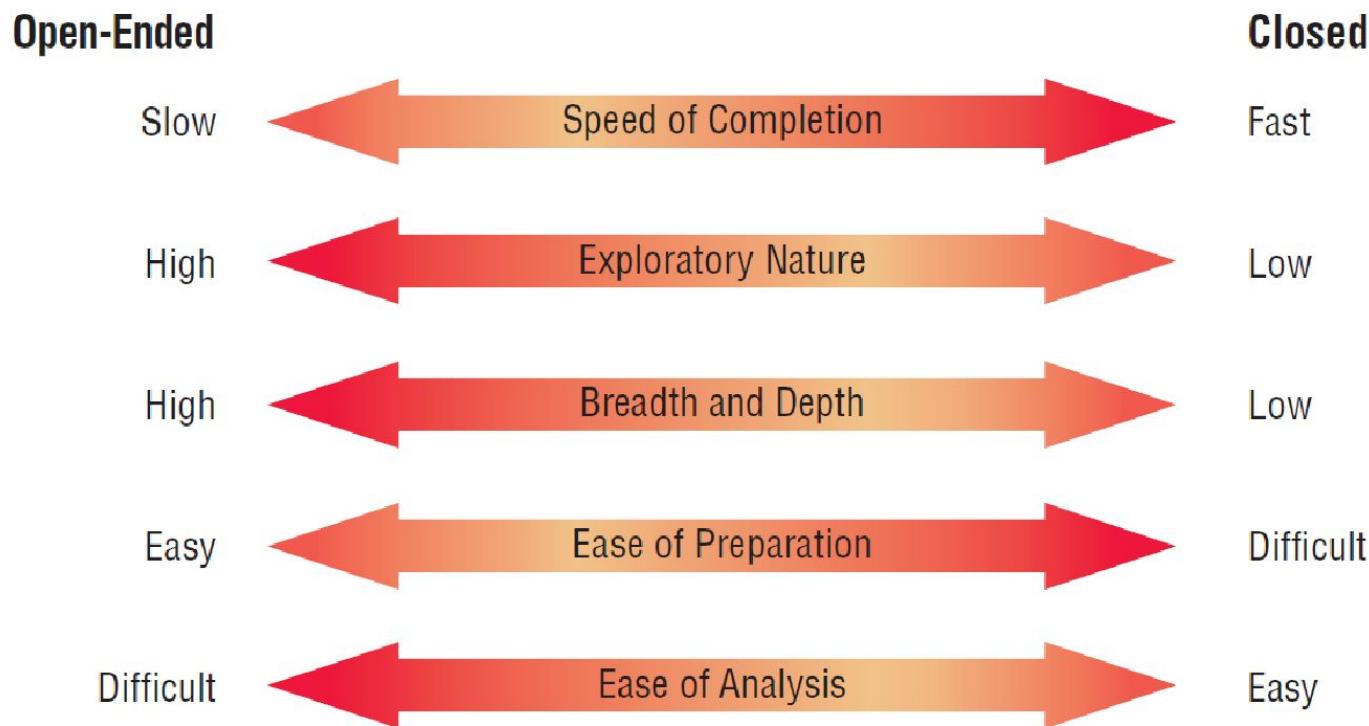
- Organization members are widely dispersed
- Many members are involved with the project
- Exploratory work is needed
- Problem solving prior to interviews is necessary

Question Types

Questions are designed as either:

- Open-ended
 - Try to anticipate the response you will get
 - Well suited for getting opinions
- Closed
 - Use when all the options may be listed
 - When the options are mutually exclusive

Figure 4.12 Trade-offs between the use of open-ended and closed questions on questionnaires



Questionnaire Language

- Simple
- Specific
- Short
- Not patronizing
- Free of bias
- Addressed to those who are knowledgeable
- Technically accurate
- Appropriate for the reading level of the respondent

Measurement Scales

- Scaling is the process of assigning numbers or other symbols to an attribute or characteristic for the purpose of measuring that attribute or characteristic.
- The two different forms of measurement scales are:
 - Nominal
 - Interval

Nominal Scales

- Nominal scales are used to classify things
- It is the weakest form of measurement
- Data may be totaled

What type of software do you use the most?

1 = Word Processor

2 = Spreadsheet

3 = Database

4 = An Email Program

Interval Scales

- An interval scale is used when the intervals are equal
- There is no absolute zero
- Examples of interval scales include the Fahrenheit or Centigrade scale

How useful is the support given by the Technical Support Group?

NOT USEFUL

AT ALL

1

2

EXTREMELY

USEFUL

3

4

5

Validity And Reliability

- Reliability of scales refers to consistency in response—getting the same results if the same questionnaire was administered again under the same conditions
- Validity is the degree to which the question measures what the analyst intends to measure

Problems with Scales

- Leniency
- Central tendency
- Halo effect

Leniency

- Caused by easy raters
 - Solution is to move the “average” category to the left or right of center

Central Tendency

- Central tendency occurs when respondents rate everything as average
 - Improve by making the differences smaller at the two ends
 - Adjust the strength of the descriptors
 - Create a scale with more points

Halo Effect

- When the impression formed in one question carries into the next question
- Solution is to place one trait and several items on each page

Designing the Questionnaire

- Allow ample white space
- Allow ample space to write or type in responses
- Make it easy for respondents to clearly mark their answers
- Be consistent in style

Order of Questions

- Place most important questions first
- Cluster items of similar content together
- Introduce less controversial questions first

Figure 4.13 When designing a Web survey, keep in mind that there are different ways to capture responses

Name	Appearance	Purpose
One-line text box	<input type="text"/>	Used to obtain a small amount of text and limit the answer to a few words
Scrolling text box		Used to obtain one or more paragraphs of text
Check box	<input type="checkbox"/>	Used to obtain a yes-no answer (e.g., Do you wish to be included on the mailing list?)
Radio button	<input type="radio"/>	Used to obtain a yes-no or true-false answer
Drop-down menu		Used to obtain more consistent results (Respondent is able to choose the appropriate answer from a predetermined list [e.g., a list of state abbreviations])
Push button		Most often used for an action (e.g., a respondent pushes a button marked "Submit" or "Clear")

Methods of Administering the Questionnaire

- Convening all concerned respondents together at one time
- Personally administering the questionnaire
- Allowing respondents to self-administer the questionnaire
- Mailing questionnaires
- Administering over the Web or via email

Electronically Submitting Questionnaires

- Reduced costs
- Collecting and storing the results electronically

Summary

- Interviewing
 - Interview preparation
 - Question types
 - Arranging Questions
 - The interview report
- Joint Application Design (JAD)
 - Involvement and location
- Questionnaires
 - Writing questions
 - Using Scales and overcoming problems
 - Design and order
 - Administering and submitting