**UNIT-4: INFORMATION GATHERING**

**Introduction**

Information Gathering is a very key part of the feasibility analysis process. Information gathering is both an art and a science. It is a science because it requires a proper methodology and tools in order to be effective. It is an art too, because it requires a sort of mental dexterity to achieve the best results. In this article we will explore the various tools available for it, and which tool would be best used depending on the situation.

**Information Gathering Tools**

There is no standard procedures defined when it comes to the gathering of information. However, an important rule that must be followed is the following: information must be acquired accurately and methodically, under the right conditions and with minimum interruption to the individual from whom the information is sought.

The top three tools of information gathering for system analysis.

The tools are:

1. Interviews and Questionnaires

2. Revision of Literature, Procedures and Forms

3. On Site Observation.

**1. Interviews and Questionnaires**:

Generally, the onsite observation is directed primarily towards describing and understanding events as they occur. By this, we cannot get the profit. On the other hand, we need to learn about people’s knowledge, feelings or motivations. Therefore, other information gathering tools are used for analysis.

If we wish to know about something, we simply ask someone about it directly, but we cannot get an riht answer. When asked by direct questions, the respondent may yield information that is invalid. The information can be successfully obtained with interviews or questionnaires.

**Types of Interview**

**A. Structured Interview**

The skill of the interviewer helps in getting the interviewee to respond and move to the next question without diversion. The questions are presented to the interviewee with exactly the same wording and in the same order.

**B. Unstructured Interview**

In the unstructured Interview the respondents are allowed answer freely in their own words. The responses are not forced. They are self-revealing and personal rather than general and superficial. The interviewer has encouraged the respondents talk freely. Unstructured interviews provide an opportunity to delve more deeply into complex topics than is possible with surveys.

**Questionnaire –**

Questionnaire is a self-administered tool that is more economical and requires less skill to administer than the interview. At any point in time, unlike the interview, feedback from many respondents can be collected at the same time. Since questionnaires are usually self-administered it is critical that questions be clear and unambiguous.   
With the help of a table below we can understand the differences between the questionnaires and an interview. This is designed to give a completely unbiased viewpoint of both methods. We will be able to view them in such a way that the benefits and shortcomings of each will be easily visible right away.

**Types of Questionnaire**

**A. Fill-in-the-blanks Questions:** They seek specific responses.

**B. Yes / No Questions:** They just seek one value either true or false or Yes or NO. There is no mixed response.

**C. Ranking Scale Questions:** The respondent needs to rank the responses into a certain scale. For e.g. to a question you might be asked to rate a service from a level 1 to 5.

**D. Multiple-Choice Questions:** They ask for a specific answer choices.

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| --- | --- |
| **Questionnaire** | **Interview** |
| Economical | Less Economical |
| Can be completed by many people at the same time | Can be administered to ONLY ONE person at a time |
| Chances of error or omissions are fewer | It could be error prone since it depends upon the skill of the interviewer to gauge the questions and interpret the responses. |
| Anonymity can be maintained. Hence user is not prevented from giving his candid opinion about an issue | Anonymity is not maintained. Hence the user might feel forced to conceal his candid opinion on an issue. |
| Gives time to the respondents. Hence they can think and give their regarded opinions on an issue | It may not give time to the respondents. Hence they may not get enough time to think and give their opinion on an issue |

#### 2. Revision of Literature, Procedures and Forms:

few system problems are difficult, therefore, as in the first step, a search of the literature through professionals; references and procedure manuals, company studies, government publications, or consultant studies is very useful. The primary drawback of this search is time. It is very difficult to such reports. Publications may be expensive and the information may be out dated due to a time lag in publication.

Procedures manuals and forms are very useful sources for the analyst. They describe the formation and functions of the present system. Up-to-date and good manuals save hours of information gathering time. Printed forms are widely used for capturing and providing information.

The following questions are decides the forms usefulness:

1. Do the forms include all the necessary information? What items should be added or detected?

2. How does the information in the form helps other users make for the better decisions?

3. Who use the form? How important are they to the user?

4. How readable and easy to follow is the form?

5. How many departments receive the existing form? Why?

#### 3. On Site Observation:

Another information gathering tool used in system studies is called the ‘on site observation’. On site observation is the process of recognising and noting people, objects and gets the information. The analyst’s role is that of an information seeker who is expected to be detached from the system being observed. The role permits participation with the user staff openly and freely.

The major objective of onsite observation is to get as close as possible to the real system being studied. For this reason, it is important that the analyst has the knowledge about the general make up and activities of the system. The following questions can provide the help in the onsite observations.

|  |  |  |
| --- | --- | --- |
| **Information Collection Tools** | **Advantages** | **Disadvantages** |
| **Document Review** | ·         Relatively inexpensive  ·         Good source of background information  ·         Unobtrusive  ·         Provides a “behind the scenes” look at a program that may not be directly observable  ·         May bring up issues not noted by other means | ·         Information may be inapplicable, disorganized, unavailable or out of date  ·         Could be biased because of selective survival of information  ·         Information may be incomplete or inaccurate  ·         Can be time consuming to collect, review, and analyze many documents |
| **Observation** | ·         Collect data where and when an event or activity is occurring  ·         Does not rely on people’s willingness to provide information  ·         Directly see what people do rather than relying on what they say they do | ·         Susceptible to observer bias  ·         Hawthorne effect – people usually perform better when they know they are being observed  ·         Does not increase understanding of why people behave the way they do |
| **Questionnaires** | ·        Administration is comparatively inexpensive and easy even when gathering data from large numbers of people spread over wide geographic area  ·        Reduces chance of evaluator bias because the same questions are asked of all respondents | ·        Survey respondents may not complete the survey resulting in low response rates  ·        Items may not have the same meaning to all respondents  ·        Size and diversity of sample will be limited by people’s ability to read |
| **Interviews** | ·         Useful for gaining insight and context into a topic  ·         Allows respondents to describe what is important to them  ·         Useful for gathering quotes and stories | ·         Susceptible to interview bias  ·         Time consuming and expensive compared to other data collection methods  ·         May seem intrusive to the respondent |

# Technical Methods of Information Gathering:

There are a variety of technical methods for information gathering. Some methods require high-tech equipment and in other situations low-tech options will work. No one source of information is the leading method to use, nor is one method alone likely to give you enough data for the compromise. When preparing for a [pen test](https://www.social-engineer.org/framework/general-discussion/categories-social-engineers/penetration-testers/) utilize multiple methods of gathering information and then synthesize the proper attack vector from that data. Attackers also use these very same methods of information gathering to execute malicious social engineering attacks. This underscores the advisability of ongoing training and education of both top- level executives and employees.

## Telephone

A simple phone call can reveal the company’s name, the name and department of the person who answered the phone, basic lingo or protocols used by the organization, and so much more. After one [phone call](https://www.social-engineer.org/framework/attack-vectors/vishing/) is completed, the pen tester can call back and use the information obtained previously to compromise the organization.

There are plenty of different ways to make the call, including burner cell phones, Google Voice, Skype, and other VoIP options. The [Caller ID Spoofing](https://www.social-engineer.org/framework/se-tools/phone/caller-id-spoofing/) section of the [Framework](https://www.social-engineer.org/framework/) has more details about these pen testing tools.

## Online searches

#### Search engines

Pen testers use search engines to locate and comb through corporate documents, resumes, floor plans, vendor relationships, phone numbers, job titles, email address protocol, business locations (even amazingly detailed photos of the buildings), and much more. A digital trip to the county auditor’s website provides a wealth of information on the target building and property, as well as a listing of tenants within the building.

#### Searching Social Networking Sites

Searching social media accounts can reveal clues or possible answers to security questions, [photos of employees wearing their ID badge](https://www.social-engineer.org/newsletter/6132/), or linking a job title to a key individual’s hobbies/interests for phishing ideas. Try typing in a name of a co-worker or friend and see how many hits or matches appear with their information.

### Advantages and some weaknesses of information gathering

Information gathering, per se, delivers a great deal of advantage to the organization undertaking it. Due to its enlightening nature for example, the researcher and his organization catches a better glimpse of other people’s situations. They are able to empathize with other people if they knew better. Better alternatives in problem solving are also in the offing upon learning of mistakes already committed by other parties.

On the down side, with the proliferation of massive amounts of data in the Internet, any researcher who took up gathering of information in the Internet can suffer from information overload. There’s just no absolute lead with information gathering in the Internet and pursued leads might lead to the doldrums in information gathering.