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Information Gathering

Ongoing Information Gathering

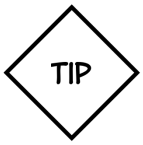
Information gathering is an ongoing part of the life of any organisation or individual. I thoroughly recommend keeping your eyes and ears open. However I do not recommend the mindless and copious collection of anything and everything which is then forgotten in filing cabinets or computerised databases! I'm talking about information which will help you to learn more about how your organisation is functioning within its external environment.

Sources of information will be colleagues, staff, existing and potential customers/clients, existing and potential suppliers, organisationally generated data, government and regulatory bulletins, professional journals and magazines, conferences, meetings and probably some others that have escaped me at this time of the morning.

Ongoing information gathering is an important factor for effectiveness because:

- Collectively, the staff, customers, suppliers and others can offer a more complete, well-rounded representation of the organisation than you alone or upper management. They will also be a rich source of differing viewpoints.
- When your staff and colleagues have been involved in assessing what it happening and what could be done next, they will be more willing to help make it happen. Since they will be the ones doing most of the work, it is worth having them on your side from the beginning.
- Your conversations with other people can be a valuable source of good ideas or collaborative projects and can lead to the discovery of new suppliers or new clients.
- And what you hear or read inside and outside of your organisation can provide an early-warning of something on the horizon. Then you can take action sooner rather than later so that you or your organisation are positioned to best advantage.

This information will form the raw material when you come to making sense of what is happening within the organisation and its environment.



I recommend that you talk to a variety of people in a variety of job-roles from a variety of departments. You want to ask and listen widely enough that all of the major areas have been covered without wasting time on redundant information.

When you talk to people, questions involving why, what and how will give you a useful overview. For example:

- What do they do?
- Why are they doing this rather than something else?
- What does ⟨...⟩ accomplish for the department or organisation? Why does ⟨...⟩ need to be accomplished?

- How is it done?
- Why is it done this way? How *else* could it be done?
- What is working well?
- Is anything holding them back from accomplishing more?
- Is there anything that could be better than it is now, either a difficulty to overcome or an opportunity to seize?
- Have there been any unexpected events or developments?

Make sure to ask any questions conversationally and don't make it an interrogation!

Specific Information Gathering

When you begin to make sense of what is happening (*Chapter 2: Mapping The Situation*) and why (*Chapter 3: Developing A Provisional Explanation*):

- you may discover areas of ignorance;
- questions may arise; or
- you may need to decide between alternative explanations.

When this happens, you will search for specific information that is relevant. The *quality* of the information that you gather will be important. Ask yourself if it is:

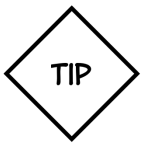
- Useful and Timely?
- Representative?
- Novel?

Human psychology being what it is, when we start looking for information, we need to beware of any preconceived ideas we already have because these will *pre-filter* what we notice. We will cherry-pick what agrees and omit what doesn't agree with our preconceptions.

As far as possible, *act as if you didn't have an opinion* and be open to any information, especially any information that might cause you to reconsider/revise your opinions.

Useful And Timely

- Which information would answer the questions or address any areas of ignorance?
- What information would help you to eliminate or decide between alternative explanations?
- Does the information represent the current circumstances? For example, stock market data from the 1930s won't be relevant to making decisions now because the stock market and financial regulations have changed substantially since then.



The pace of decision-making will need to match the pace of events. When the pace of change is quick, then you will have less time to collect the information that would be required to make the *best* possible decision. In this case, I suggest making smaller-scale and shorter-term decisions. The advantages are:

- less risk of large-scale or long-term errors that are difficult (or impossible) to rectify;
- faster feedback lets you correct the decision or adapt to circumstances quickly; and
- a sequence of small decisions can still have a beneficial cumulative effect.

Representative

To ensure that your information is *representative*:

- Collect from a diversity of sources.
- Collect both favourable and unfavourable data.
- Beware of single values.
- Distinguish between objective and subjective information.

Collect From A Diversity Of Sources

As mentioned earlier it is useful to collect information and opinions from a wide variety of sources internally and externally. Diversity is one of your best methods for avoiding a biased representation of the situation.

Collect Both Favourable And Unfavourable Data

It is unlikely that any situation is 100% good or 100% bad, so be willing to collect both positive and negative data without any pre-filtering or pre-selection. You are more likely to come to an accurate and unbiased representation of circumstances.

Beware Of Single Values!

Working with a range of values is more representative than a single (average) value. When you hear someone say that laying off 30% of the staff will increase profitability by 25% then the alarm bells should start ringing! Ask questions such as the following to gain a more accurate appreciation of the situation:

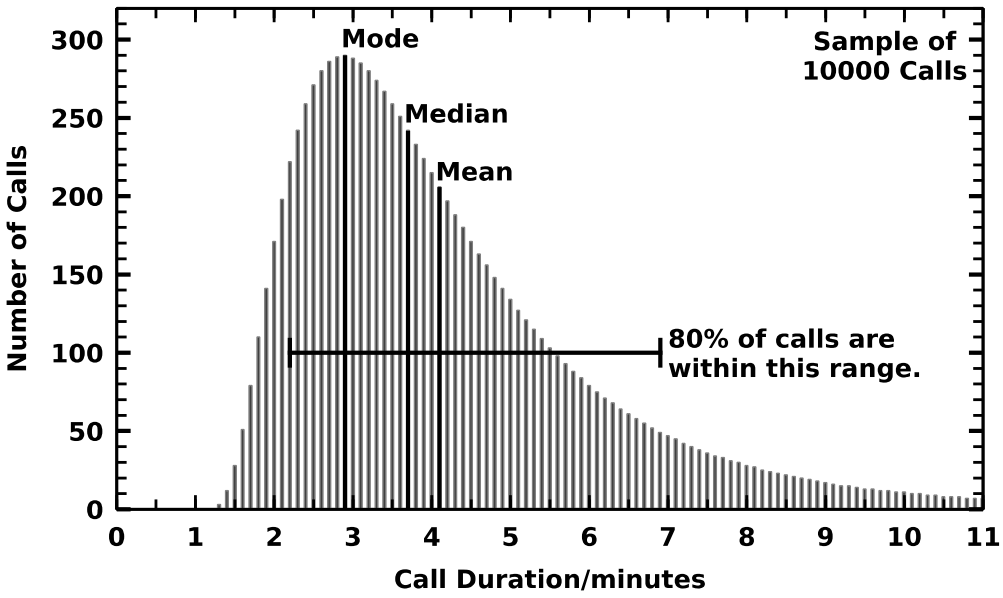
- Where did these single numbers (30% and 25%) come from?
- How reliable are these estimates? Do they presuppose that everything will work perfectly?
- What factors could affect or change the prediction?
- What are the minimum required savings that the layoffs are meant to achieve? How many layoffs are required to accomplish this?
- What is the maximum number of staff that could be cut without compromising productivity?
- Is there any safety margin on these estimates?

Many quantities have a range of values and these *distributions* can often be asymmetric (or *skewed* in posh statistical terminology). This is why a single number isn't a truthful representation.

Let's look at two examples of skewed data: the *lognormal* and *inverse power-law* distributions. The *lognormal distribution* occurs in data such as the following:

- company sizes;
- duration of telephone calls (see graph below);
- annual individual incomes;
- failure times for mechanical equipment and parts;
- insurance claims.

If we measured the call-durations from 10000 calls made to a call-centre, we could see a lognormal distribution like this.



In looking at this distribution, we can see that it is asymmetric with a substantial tail of longer calls. The mode (most frequent), median (midpoint of the data) and mean (average), are different from each other. Can any one of them be considered to be a better measurement of the distribution than the others?

As single numbers, the mode, median and mean don't represent the asymmetric spread of the data. Using the mean call duration would be misleading because some calls could be as short as 1.3 minutes (best-case scenario) or as long as 11 minutes (worst-case scenario).

To represent the asymmetric shape of the data, it would be better to quote the range within which 80% of the calls fall (2.2 to 6.9 minutes). And the best would be to show people the set of data as a graph/plot.

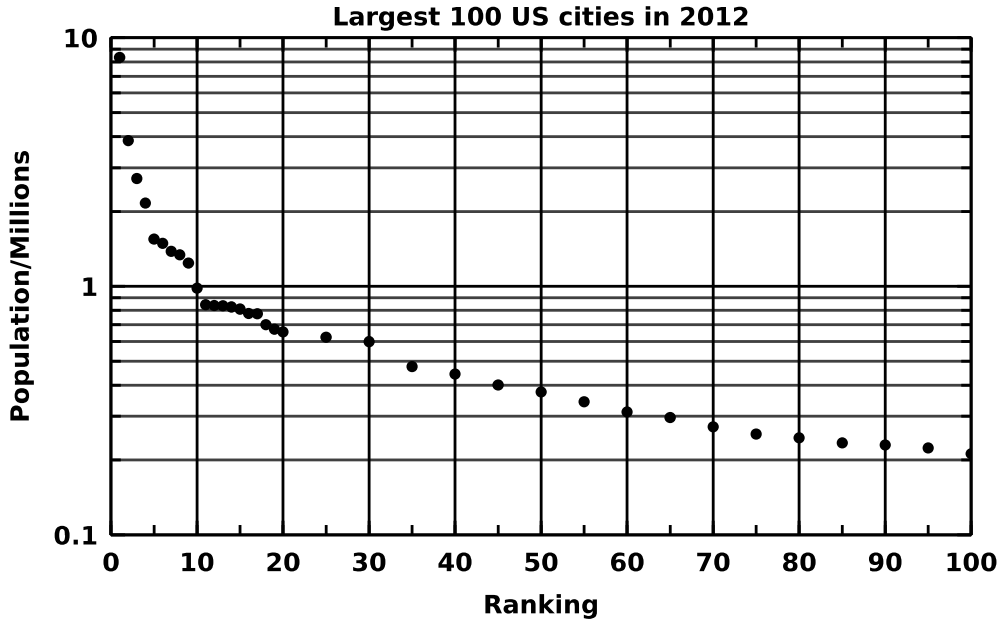
When other people give you a single number, ask them to re-specify it as either a range with a degree of confidence or a best-case and worst-case. When you speak to others, develop the habit of offering a range of values and your degree of confidence in the range. This degree of confidence could either be objective

(as in the call-duration example) or it could be a subjective estimate on your part.

A second kind of commonly encountered distribution is the *inverse power-law* which has been found in data such as:

- ranking and populations of cities (see the graph following);
- number of visitors to websites;
- number and sizes of files on a computer; and
- sales of books or music or movies.

As an example, let's look at the list of US cities in 2012, ranked according to population. If we plot data from the 100 largest cities, then we get a graph like the following.



Notice that we have 9 cities with more than 1 million people and then we have a long tail of 91 cities with less than 1 million. If we average the top-ten cities, then we get a value of approximately 2.5 million and if we average the top-twenty cities then we get 1.6 million. Averaging the top-100 cities gives us an average of approximately 850,000. As we include the smaller and more numerous cities, the average moves further into the tail.

NOTE

Some of the more computationally/numerically-minded readers may be thinking "Curve fit the data!". This is indeed possible but it isn't a guaranteed improvement.

- The fitting equation must match the shape of the data, otherwise the results will misrepresent the truth. For example, fitting a straight line to data that is obviously curved is a misrepresentation of the data and may lead people to draw invalid conclusions. (I've seen this one!)
- Most people are not familiar with thinking in terms of equations and parameters. So for many, you would be replacing unrepresentative numbers by an incomprehensible equation with parameters.

Distinguish Between Objective And Subjective Information

Objective data isn't a matter of opinion or interpretation. Anyone else would measure the same value. If the temperature of a room is 20 °C, then it is this temperature for everyone in the room.

Subjective information will represent each person's particular opinion or experience. So the room that is 20 °C may be warm for some people, cool for others and just right for a third group.

Abstract, intangible quantities, such as "morale", are often vague labels for subjectively assessed circumstances. When someone uses an abstract and subjective term, then drill-down to more concrete and specific terms. For example:

- If someone says *morale is good*, then what have they noticed that led them to this interpretation?
  - People are cheerful? (subjective)
  - Staff turnover is the lowest it's been in 5 years? (objective)
  - The amount of sick leave, especially stress-related varieties, is below the industry average? (objective)
  - The number of errors is decreasing? (objective)
  - Staff are more willing to help and show initiative? (subjective)
- If someone says that *morale is bad*, then what have they noticed that led to this assessment?
  - People look miserable? (subjective)
  - Staff turnover is increasing rapidly? (objective)
  - The amount of sick leave, especially stress-related varieties, is above the industry average? (objective)
  - The number of errors is increasing? (objective)
  - Staff are uncooperative, do the minimum required and only what they are told to do? (subjective)

A book I liked about choosing meaningful metrics, especially for intangible factors was *How to Measure Anything*, written by Douglas W. Hubbard and published by John Wiley & Sons in 2007.

Novel

While you are collecting specific information, keep your eyes and ears open for anything that is:

- unexpected or surprising;
- anomalous or unusual;
- different or incongruous;
- contradictory or inconsistent with the rest of your information.

This kind of information is often a clue that:

- some of the information may be unreliable; or
- some aspect of your current thinking is incorrect; or
- there may be an unrecognised opportunity for creativity/innovation.

As you gather information about a situation, you may face one of two difficulties:

- It's human nature to begin forming an opinion of how the pieces fit together. This tendency means that you might form your opinion too quickly and this hasty opinion could be either *incorrect* or *incomplete*.
- When you look at the growing pile of information, you might find yourself unable (or unwilling?!) to form an opinion at all!

To avoid the above difficulties and help you structure the information, I suggest that you map the situation.