Data Gathering & Brainstorming

Data gathering is a process of preparing for and then collecting data needed to facilitate decision making. Data is collected to provide information regarding a specific topic the information obtained is keep on record and used to make decisions about important issues.

Data collection is often formalised through a data collection plan which should include:

- Pre collection activity – Agree goals, target data, definitions and methods
- Collection – data collection
- Present Findings – usually involving some form of sorting, analysis and/or presentation.

The pre-collection activity is one of the most crucial steps in the process. The quality of the data collected can be devalues as a consequence of poor design or sampling of both questions and informants, and poor elicitation techniques. After an effective pre-collection phase, data collection can be carried out in a structured, systematic and scientific way.

If the data is to be elide on for decision making, a formal data collection process is necessary to ensure that data gathered is both defined and accurate, and that subsequent decisions based on the findings are valid.

Data collection techniques

Data can be gathered using a range of techniques. Each option has advantages, and weaknesses. Some of the options include:

- Personal interviews
- Questionnaires (post, email)
- Web survey forms
- Observational studies
- Experimentation
- Sampling and statistical surveys
- Opinion polls and censuses
- Using administrative by-product data collected as a by-product of an organization's day-to-day operations

Each option has advantages, such as accuracy, speed, flexibility, simplicity and detail; and disadvantages, such as cost, lack of control and time. Particular care is needed to ensure the questions[1] are not designed to bias responses towards a particular point of view and that the sample used is representative of the whole 'population' being analysed.

Data analysis techniques

The analysis of the data collected requires specific skills and knowledge. It involves the inspection, cleaning, transforming, and modelling of the data with the goal of highlighting useful information, suggesting conclusions, and supporting decision making. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains. If you data are at all complex, seek expert advice!!

[1] For more on questioning see: http://www.mosaicprojects.com.au/WhitePapers/WP1012_Active_Listening.pdf

Data gathering conclusions

Good questions outrank easy answers! The skill in data gathering is asking the right people, the right questions, in the right way. Then analysing the data you have gathered to extract the information needed for decision making.

Brainstorming

Brainstorming is focused on gathering ides, in many ways it is similar to data gathering; the difference is the 'data' exists to be discovered, ideas need to be created.

Brainstorming is a facilitated[2] group creativity technique by which a group tries to find a solution for a specific problem by gathering a list of ideas spontaneously contributed by its members. The four general rules of brainstorming are.

1. **Focus on quantity**: This rule is a means of enhancing divergent production, aiming to facilitate problem solving through the maxim quantity breeds quality. The assumption is that the greater the number of ideas generated, the greater the chance of producing a radical and effective solution.
2. **Withhold criticism**: In brainstorming, criticism of ideas generated should be put 'on hold'. Instead, participants should focus on extending or adding to ideas, reserving criticism for a later 'critical stage' of the process. By suspending judgment, participants will feel free to generate unusual ideas.
3. **Welcome unusual ideas**: To get a good and long list of ideas, unusual ideas are welcomed. They can be generated by looking from new perspectives and suspending assumptions. These new ways of thinking may provide better solutions.
4. **Combine and improve ideas**: Good ideas may be combined to form a single better idea. It is believed to stimulate the building of ideas by a process of association.

Surprisingly, you can brain storm on your own and some research suggests groups are less effective than individuals when it comes to creativity.

Variations on the basic brainstorming process:

Nominal group technique: encourages all participants to have an equal say in the process and to generate a ranked list of ideas. Participants are asked to write their ideas anonymously. Then the moderator collects the ideas and each is voted on by the group. The vote can be as simple as a show of hands in favour of a given idea. This process is called distillation. After distillation, the top ranked ideas may be sent back to the group or to subgroups for further brainstorming.

Group passing technique: each person in a circular group writes down one idea, and then passes the piece of paper to the next person in a clockwise direction, who adds some thoughts. This continues until everybody gets his or her original piece of paper back. By this time, it is likely that the group will have extensively elaborated on each idea.

Team idea mapping: begins with a well-defined topic. Each participant brainstorms individually, then all the ideas are merged onto one large idea map. Once all the ideas are captured, the group can prioritize and/or take action.

Electronic brainstorming: is a computerized version of the manual brainstorming technique typically supported by an electronic meeting system. Simpler forms can be done via email and may be browser based, or use peer-to-peer software. Ideas are entered independently. Contributions become immediately visible to all and are typically anonymized to encourage openness and reduce personal prejudice.

[2] For more on facilitation see: http://www.mosaicprojects.com.au/WhitePapers/WP1067_Facilitation.pdf

Question brainstorming (or Questorming): involves brainstorming the questions, rather than trying to come up with immediate answers and short term solutions. The answers to the questions form the framework for constructing future action plans.

Innovating ideas using SCAMPER

SCAMPER. is an acronym for useful list of words that can be applied as stimuli to make you think differently about the problem area and stands for:

Substitute. Change a component or an ingredient within an idea. What can you substitute? What can be used instead? Who else instead? What other ingredients? Other material? Other process? Other power? Other place? Other approach? Other sounds? Other forces?

Combine. Combine different ideas or components. Combine units? Combine purposes? Combine appeals? Combine ideas?.

Adapt. What can you adapt for use as a solution? What else is like this? What other idea does this suggest? Does past offer a parallel? What could I copy? Who could I emulate?.

Modify, magnify or minimize. Can you change the item or idea in some way? Change meaning, form, shape? Other changes? What can you add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate? What can you remove? Smaller? Condensed? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?

Put to other use. How can you put the thing to different or other uses? New ways to use as is? Other uses if it is modified?

Eliminate. What can you eliminate? Remove something? Eliminate waste? Reduce time? Reduce effort? Cut costs?

Rearrange or reverse. What can be rearranged in some way? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?

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