2010

Delphi Therapy

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Recommended Citation

Forsyth, Donelson R. "Delphi Technique." *Encyclopedia of Group Processes & Intergroup Relations*. Edited by John M. Levine and Michael A. Hogg. Vol. 1. Thousand Oaks, CA: SAGE Publications, 2010. 195-97.

Delphi Technique

The *Delphi technique* is a structured forecasting and decision-making method that assesses and summarizes the individually held opinions and judgments of group members with little or no discussion or deliberation among the members. Named for the legendary Delphic oracle, this method involves surveying members repeatedly, with the results of each round of surveys informing the framing of the questions for subsequent rounds. The Delphi technique avoids some of the limitations of traditional group decision-making procedures and is particularly useful when the group members are so widely divided on issues that a face-to-face discussion will not be productive.

Origin of Delphi

The Delphi method was developed by decision makers at the RAND Corporation, which is a nonprofit institute that conducts problem-focused research in public policy, science and technology, international issues, energy, and the environment. Recognizing the inherent difficulty of reaching consensus among experts about future trends and events, the developers named their method after the famed Delphic oracle of Greek mythology. History claims that those who wondered about their future could consult the oracle for guidance and, in some instances, receive accurate if somewhat ambiguous prophecies of what lay in store for them. One king of legend, for example, asked the oracle if he should settle a dispute with a neighboring territory through warfare. The oracle assured him that such an attack would bring about the fall of a great empire. Only when his army was soundly defeated and his kingdom lost did he realize that the prophecy referred to his own empire.

The modern developers of the Delphi technique turned to groups to reduce the ambiguity of the oracle's prediction about the future and also increase its accuracy. They recognized the value of basing decisions on the collective wisdom of a group. When many individuals examine an issue, the group's decision is informed by more ideas, and novel solutions and insights may emerge from the discussion. A group's scrutiny may also find and correct errors that may go unnoticed by a lone individual. Biases, however, can introduce inaccuracy into the decisions made by groups during face-to-face deliberations. The more rhetorically forceful members of the group may convince others to adopt their position, more through force of argument than through rational persuasion. Members may feel uncomfortable expressing their position in the group context, particularly when they are relatively new to the group and find that they disagree with what seems to be the group's emerging consensus. Members may also be so deferent to those with more authority in the group that they do not air dissenting views. To counter these negative group processes, the originators of Delphi recommended surveying members of the group individually, before any deliberations occurred, to capture their views before they were influenced by others in the group.

Using the Delphi Method

The Delphi method was initially used for forecasting trends—particularly technological developments—and assessing the relative importance of alternatives. The Delphi method is particularly well suited to handling ill-formed problems, ones that cannot be solved by a systematic review of the available data or the application of a rational decision-making method that will identify the best or most satisfying solution. A group may wish, for example, to identify the economic changes that may result from global environmental and political events; set national priorities for the next decade; explore ways to improve health care; find and rank the causes of employee dissatisfaction; and set

budgetary initiatives. Given the enormity of these issues, the group may begin the process by using a Delphi method to narrow the issues and identify tentative solutions.

The Delphi coordinator would begin the process by developing a short list of questions on the topic and then gathering the answers of a carefully selected group of respondents. Responses are then pooled and communicated back to the respondents, who are asked to restate their responses to the original items, comment on others' responses, or respond to new questions that emerged as important in the first round of surveying. This process is repeated until a solution is reached.

Delphi procedures vary considerably from this basic formula, but most include these basic elements. The method is a highly structured one, for it requires a coordinator who selects the respondents, designs the survey questions, collects the data from respondents, and develops each interim summary and report. By design, respondents usually do not know who else is in the Delphi group. Delphi is a group procedure, but it avoids face-to-face group discussion and deliberation to encourage openness and a free-wheeling flow of ideas. Delphi is also an asynchronous and geographically dispersed decision method, for the respondents respond when they can, at different times, rather than at the same time and in the same place (such as a conference room table).

Delphi is also an iterative procedure in that the question–answer process is repeated several times. On the first assessment, participants list their own solutions to the questions posed, but their responses are summarized by the coordinator, who then feeds the information back to the group. The group members cannot directly discuss any issues or ideas raised in the first round, but they can at this point amend their original answers or offer new points and insights. As this process is repeated, a consensus emerges, and in some cases, participants may be asked to vote on the validity of the conclusions that emerge. The coordinator may stop the process after only one iteration if a solution emerges quickly, but complex, unclear problems usually require many more iterations.

Group composition is a critical determinant of the success of Delphi. In most cases, a Delphi group includes between 5 and 20 respondents because the responses of too many respondents can be difficult to summarize for subsequent iterations. Originally, the process called for surveying experts who had different opinions on the issue but had neither the time nor the inclination to meet in a traditional face-to-face meeting. If, however, generalizability is desired, then the coordinator should use proper sampling procedures so that the results are representative of the views of those beyond the Delphi group itself. Moreover, and as with most group methods, the quality of the results will be determined by the involvement and motivation of the members. If respondents do not take the time to respond diligently and thoughtfully, then the Delphi will yield little useful information.

Advantages and Limitations

As a performance technique, Delphi can be very usefully applied when issues need clarification, when the opinions of a wide range of people are important, and when face-to-face meetings are impossible for the people whose input is required. The method also encourages a deep, reflective analysis of an issue because participants can take the time they need to consider the issue. Unlike a face-to-face deliberation, in which the discussion moves at a pace set by the collective, participants in a Delphi can respond after they have considered the issue fully.

The method is not without certain limitations. First, the project planners must clearly conceptualize the question they wish to answer; since the group members will be responding individually, they will not have the opportunity to clarify the question via discussion. The coordinators must therefore make certain that the questions posed are unambiguous so that each individual is responding to the same set of assumptions. Coordinators must also avoid phrasing their questions in a way that might bias the responses of the group members. Second, because it involves repeated assessment of members' opinions via surveys, a Delphi is, as originally conceived, a relatively slow procedure. Time and effort were needed for the organizer to write and send out the surveys, collect responses, and generate the next round of questions. Furthermore, if respondents were not motivated to complete and return the questionnaire, then the process broke down completely.

Despite these drawbacks, the limited evidence pertaining to the effectiveness of Delphi suggests that the technique is more effective than an unstructured problem-solving session. The method is particularly effective when the group has the opportunity to meet in later rounds of the process to deliberate in a face-to-face situation. Also, technology offers some solutions to these drawbacks. The Delphi method was developed as a paper-and-pencil technique; the coordinator developed the questions, mailed them to respondents, respondents mailed back their responses, and the coordinator developed the summative report before starting the next iteration. Modern Delphi methods use computer-based group support systems to coordinate the process.

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See also Brainstorming; Group Problem Solving and Decision Making; Process Gain and Loss; Social Comparison Theory

Further Readings

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