Delphi methods

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The opinion of outside experts, or Delphi method, is useful where there is a great deal of uncertainty or for long time horizons. Delphi is used where a consensus of expert opinion is required on the timing, probability and identification of future technological goals or consumer needs and the factors likely to affect their achievement. It is best used in making long-term forecasts and revealing how new technologies and other factors could trigger discontinuities in technological trajectories.

The choice of experts and the identification of their level and area of expertise are important; the structuring of the questions is even more important. The relevant experts may include suppliers, dealers, customers, consultants and academics. Experts in non-technological fields can be included to ensure that trends in economic, social and environmental fields are not overlooked.

The Delphi method usually begins with a postal or internet survey of expert opinion on what the future key issues will be, and the likelihood of the developments. The response is then analysed, and the same sample of experts resurveyed with a new, more focused questionnaire.

This procedure is repeated until some convergence of opinion is observed, or conversely if no consensus is reached. The exercise usually consists of an iterative process of questionnaire and feedback among the respondents; this process finally yields a Delphi forecast of the range of experts' opinions on the probabilities of certain events occurring by a quoted time.

The method seeks to nullify the disadvantage of face-to-face meetings at which there could be deference to authority or reputation, a reluctance to admit error, a desire to conform or differences in persuasive ability. All of these could lead to an inaccurate consensus of opinion.

The quality of the forecast is highly dependent on the expertise and calibre of the experts; how the experts are selected and how many should be consulted are important questions to be answered. If international experts are used, the exercise can take a considerable length of time, or the number of iterations may have to be curtailed. Although seeking a consensus may be important, adequate attention should be paid to views that differ radically 'from the norm' as there may be important underlying reasons to justify such maverick views. With sufficient design, understanding and resources, most of the shortcomings of the Delphi technique can be overcome and it is a popular technique, particularly for national foresight programmes.