

# LECTURE 8

## The Delphi Method and the Nominal Group Technique

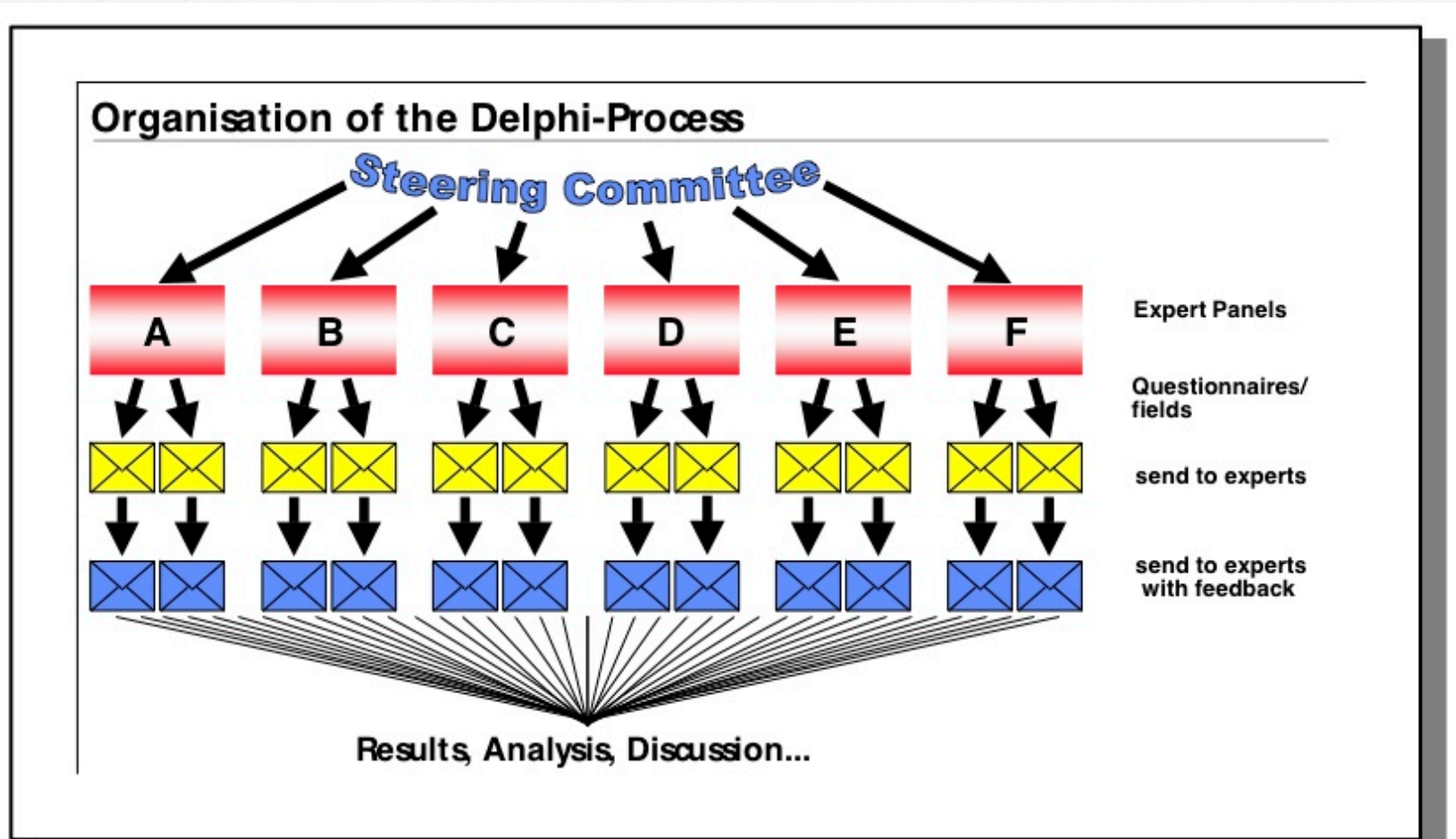


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# DELPHI

- **ORIGIN:** RAND Project (1950s and 1960s) by Olaf Helmer, Normal Dalkey and Nicholas Rescher.
- **ORIGINAL GOAL:** Obtain accurate forecasts for non-formalizable problems (e.g.: cold-war geopolitical analysis).
- **EXTENDED GOAL:** Gather information (qualitative or quantitative) in the absence of a specific method that can replace expert judgment (e.g. risk analysis in the aerospace engineering sector).

# DELPHI SURVEY



## ADVANTAGES OF DELPHI

- **Anonymity.** No personal interaction among experts: at least some group dynamics (e.g. groupthink) are eliminated or reduced.
  - **Feedback.** Feedback is shown, in some situations, to improve expert's accuracy as well as convey information on the direction the group is taking throughout the deliberation process.
  - **Convergence.** In Delphi interaction, groups converge from round to round but convergence is only limitedly (and only if feedback is provided) an effect of groupthink. Ideally, convergence is to the truth, although this is mostly an empirical problem connected with Delphi.
- ➔ ***NOTA BENE.** All of the above are general, and partly only theoretical, characteristics of Delphi; as Rowe and Wright's article highlight, the properties of Delphi are highly dependent on the context and the specific method used, and yet to be thoroughly assessed.*
- ➔ *Some references: [Dalkey and Helmer (1963)], [Dalkey (1969)], [Dalkey et al. (1972)], [Linstone and Turoff (1975)], [Cooke (1991)], [Rowe and Wright (1999)], [Aspinall (2010)].*

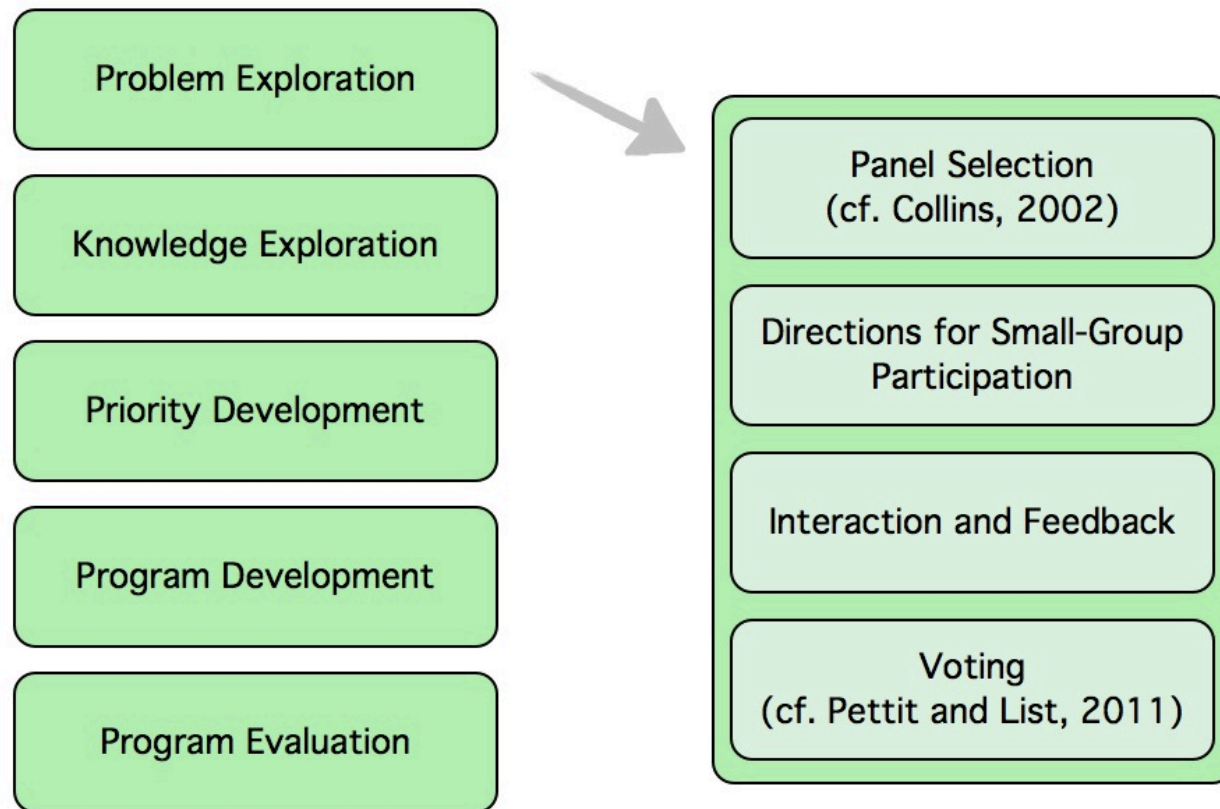
# NOMINAL GROUP TECHNIQUE

- **ORIGIN:** Behavioral psychology for business planning — Andr´e Delbecq and Andrew Van de Ven, A Group Process Model for Problem Identification and Problem Planning (1971).
- **ORIGINAL GOAL:** Facilitate the creation of new information in the context of business planning and problem solving.
- **EXTENDED GOAL:** Facilitate the works of expert panels in general, with respect to management, transmission of information etc.

# EXAMPLE: STRUCTURE OF A NOMINAL GROUP (PHASE 2)

- I. Selection of Client or Consumer Sample  
(Divided according to age, geography, technical application, or other appropriate categories)
- II. Meeting with Clients or Consumer Groups to explore problem dimensions
  - A. Introduction (10 minutes)
    1. Welcome
    2. Expression of organization(s)' interest in clients' problems
    3. Indication that focus is on problems, not solutions
    4. Explanation of "personal" vs. "organizational" problems
  - B. Directions for small-group participation
    1. Assign clients to small groups of 6 to 9
    2. Instruct them in nominal group format
      - a. Listing "personal" problem dimensions on 5" x 7" cards (15 minutes)
      - b. Listing "organizational" problem dimensions on 5" x 7" cards (15 minutes)
    3. Provide flip chart and recorder for round-robin sharing of individually noted items
      - a. Items from individual cards (first organizational, then personal)
      - b. New items suggested by process
  - C. Fifteen-minute break
  - D. Interacting group discussion of each item on flip chart in serial fashion for clarification, elaboration, and/or defense, but not for collapsing or condensing items.
  - E. Nominal group voting on 3" x 5" cards for top five priority items on both "personal" and "organizational" lists
  - F. General Session—discussion of tabulated votes from each small group
  - G. Explanation of PPM and election of representative(s) for Phase II

# THE PHASES OF A NOMINAL GROUP SESSION



## ADVANTAGES OF NGT

- **Alternation.** The idea of using structured deliberation was to exploit the advantages of individual assessment and analysis of a problem, as well as those of group interaction. Alternation of individual and group stages exploits both. Structuring (following) should limit the biases deriving from each of the two.
- **Structuring.** Structured deliberation limits the effects of conformity and “avoids the dominance of group output by strong personality types.” A full justification of the advantages of structured as opposed to unstructured is in [Delbecq and Van de Ven (1971), 206-207].
- **Inclusion\*.** The Nominal Group Technique deals with some issues that do not belong to the technical aspects of deliberation alone, e.g. selection of the committee (who is an expert and who is not?); extension of the domain of expertise to include different types of expertise (e.g. [in economics] theoreticians, historians, practitioners, etc.). This can be a political, or social problem, but it is relevant in the evaluation of theoretical issues in economics. On the issue Collins and Evans have written extensively but only at an abstract level [Collins and Evans (2002), Collins(2004)].

➔ *Some references: [Delbecq and Van de Ven (1971)], [Nonaka (1991)]*

# APPENDIX - Calibration

(the Cooke Method)

H<sub>1</sub> ✓  
 H<sub>2</sub> ✗  
 H<sub>3</sub> ✓  
 H<sub>4</sub> ✓  
 H<sub>5</sub> ✓  
 H<sub>6</sub> ✗  
 H<sub>7</sub> ✗  
 H<sub>8</sub> ✓  
 H<sub>9</sub> ✗  
 H<sub>10</sub> ✗  
 H<sub>11</sub> ✗  
 H<sub>12</sub> ✗  
 H<sub>13</sub> ✓  
 H<sub>14</sub> ✓  
 H<sub>15</sub> ✗  
 H<sub>16</sub> ✓  
 H<sub>17</sub> ✓  
 H<sub>18</sub> ✓  
 H<sub>19</sub> ✗  
 H<sub>20</sub> ✓

	<b>.2</b>	<b>.4</b>	<b>.6</b>	<b>.8</b>	<b>p-bins</b>
H <sub>2</sub>	H <sub>2</sub>	H <sub>5</sub>	H <sub>1</sub>	H <sub>8</sub>	
H <sub>3</sub>	H <sub>3</sub>	H <sub>6</sub>	H <sub>4</sub>	H <sub>12</sub>	
H <sub>13</sub>	H <sub>13</sub>	H <sub>7</sub>	H <sub>9</sub>		
H <sub>14</sub>	H <sub>14</sub>	H <sub>10</sub>	H <sub>15</sub>		
		H <sub>11</sub>	H <sub>17</sub>		
		H <sub>16</sub>	H <sub>19</sub>		
		H <sub>18</sub>	H <sub>20</sub>		
	<b>exp. 4/20 (20%)</b>	<b>exp. 7/20 (35%)</b>	<b>exp. 7/20 (35%)</b>	<b>exp. 2/20 (10%)</b>	
	<b>real 3/4 (75%)</b>	<b>real 3/7 (ca. 42.8%)</b>	<b>real 4/7 (ca 57.1%)</b>	<b>real. 1/2 (50%)</b>	