

How to Make Better Forecasts and Decisions: Avoid Face-to-face Meetings

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Every week I hear people complain about meetings. Here's something to consider: What would happen to your organization if it became difficult to have face-to-face meetings? Some organizations have taken steps in this direction by holding meetings in rooms without chairs, imposing short time limits, or limiting the size of the groups. But what if an organization went further and *penalized* people for spending time in meetings? Or what if organizations required justification that the meeting had a clear-cut payoff? As part of assessing the payoff, they could provide a visible taxi-style meter that used attendees' billing rates to show how much the meeting was costing. What if they abolished face-to-face meetings?

I have been thinking about the need for face-to-face meetings for some time now. Recently, I have been spurred on by *The Wisdom of Crowds* (Surowiecki 2004), a delightful yet exasperating book. Delightful because the writing is so clever, and because it contains descriptions of interesting research studies, many of which were new to me; exasperating because the book is not well organized, and because the writing is so clever that one may not notice the gaps in logic. Nevertheless, the book's major conclusion is important: traditional meetings yield poor decisions and inaccurate forecasts. Dave Barry summarized this conclusion in fewer words: "If you had to identify, in one word, the reason why the human race has not achieved, and never will achieve its full potential, that word would be 'meetings'." (Apparently Barry's quote hit a nerve; a Google search for his conclusion turned up almost 600 "relevant" sites in May 2006.)

The term "crowds" in the title of Surowiecki's *Wisdom of Crowds* is unfortunate. What he actually claims is that the "collective wisdom of many individuals, *when acting alone*," contains wisdom. Crowds act together, and they do not have wisdom. A more descriptive title would have been "The Superiority of Combined Independent Anonymous Judgments."

The book has been widely reviewed on Amazon with comments from over 200 readers who provided a bi-modal ratings distribution. The negative reviewers fell into two classes: those who were upset at the basic conclusions and those who were upset at the gaps in logic. The experts priced this book at \$25, but the crowd's price for a new copy in May 2006 was \$10. If you enjoy books like *Who Moved my Cheese* and Jack Welch's *Winning*, you are unlikely to enjoy *The Wisdom of Crowds*. It will make you think. Anyway, it made me think more about meetings.

Face-to-face meetings could be effective

Knowledge exists on how to run meetings effectively. This was well summarized over four decades ago by Norman R. F. Maier. His research showed how group leaders could make effective use of people's information. His book (Maier 1963) provides evidence-based principles for running meetings. Exhibit 1 provides a one-page summary of his principles.

Exhibit 1. Guidelines for Problem-Solving Meetings

- **Be problem-centered.** Keep any discussion problem-centered and avoid looking for excuses or seeking to blame others for a problem.
- **Explore alternatives.** Do not accept the first answer you hear as *the* answer. Ask, "What else should be considered?" "What else might we do?"
- **Record suggestions.** Keep track of all suggestions for solving a problem or making sense of an issue so that each may be explored fully.
- **Explore.** Explore a number of suggestions for addressing an issue, then probing and evaluative questions can be asked. These might include: "How would that work out?" "Do I understand the issue or do I need to search out more information?" "Am I mistaken in my assumptions about the issue?" "What are the advantages or disadvantages of each proposal?" "Is there a way to combine suggestions to generate an even better solution?"
- **Protect people.** Protect individuals from personal attacks and criticism, especially if they present minority or divergent viewpoints. Avoid saying things like, "That's a really stupid idea."
- **Understand and resolve differences.** Understand differences of opinions in the group and attempt to resolve them.

Adapted from Maier (1963)

Unfortunately, it is rare to find group leaders who use Maier's advice. In my 45-year career, I can remember only a handful of business-school students or business executives who have run meetings effectively. So while it is possible to run effective meetings, it does not happen.

If not practical, why do people persist in face-to-face meetings? One reason might be that managers like the control meetings give them over others; they can see that others are coming together at their command. Second, people believe that meetings are effective. A third reason is that people falsely believe that by merely aggregating opinions without a face-to-face meeting, one gets a decision or forecast that is only average. Such a belief was dispelled as a matter of logic by Laplace in 1818. In 1878, Galton showed that by averaging portraits of women, the resulting portrait was judged not average looking but was more beautiful than all of the component portraits. Larrick and Soll (2006), in a clever series of experiments, showed that among highly intelligent subjects (MBA students at INSEAD), most did not understand that the error of the average judgment is almost always smaller than the error of the average person in a group. More surprising to them was that the average judgment is sometimes better than the best judgment. Finally, people are social animals and many of them enjoy the interaction with others in a face-to-face setting.

The case against face-to-face meetings

Face-to-face meetings are expensive to schedule and run. They might involve travel costs or come at inconvenient times, such as when a person is busy or tired. Time is wasted when people come late, talk about irrelevant topics, or leave early.

Face-to-face meetings are subject to many types of biases. How loud do people talk? How deep is their voice. What do the people look like? How is the furniture arranged? How are people dressed? What is each person's body posture? Who has the power? How does the group leader guide the meeting? Does the group nurture dissent? Do people have prior positions on the topic?

Some people are so concerned about what they want to say that they do not listen to what others are saying. Some people are so intent on listening that they have no time to think. Some people often feel the need to restate their position rather than to discuss facts and reasons. Few people take notes, with the result that a week later, many cannot remember what happened. Few people are able to develop useful action steps.

Not surprisingly, then, many studies show that compared with other methods of aggregating opinions (such as using the average of a set of independent judgments), the simple act of meeting face-to-face harms forecasting and decision-making, although the people involved in these experiments typically do not believe the results.

Interestingly, the findings for forecasting and decision-making are similar to those studies that involved groups generating creative ideas. As shown in the research review by Gallupe, et al. (1991), individuals produce more creative suggestions than groups, even if the groups are well run.

Alternatives to face-to-face meetings

The implication of the above research is that managers need to be creative in finding ways to effectively use the knowledge in a group *while preventing them from meeting face-to-face*. This will lead to better forecasts and better decisions than are currently being made in organizations. It will also save time and money.

There are two conditions under which independent judgments should be combined. The first is obvious: diversity of opinions. The key word is "of opinions." For example, it would make little sense to add corporate board members just because of their differences related to looks, height, weight, religion, race, gender, and so on; in fact, Stewart's (2006) meta-analysis of 26 tests found a small *negative* relationship between team members' demographic heterogeneity and performance. The second condition is that the experts must have useful information about the topic of interest; combining ignorance does not lead to wisdom.

Decision-making and forecasting can be improved to the extent that:

- people state opinions independently, and
- opinions are aggregated objectively, using a pre-determined mechanical scheme.

There are a number of ways to implement these alternatives to face-to-face meetings. I discuss three: markets, nominal groups, and virtual teams.

Markets (also known as prediction markets, information markets, or betting markets)

Experts, as well as non-experts, bet on outcomes. Markets are common in finance and sporting events. People receive feedback only through prices and volume of trading.

Surowiecki describes the use of markets for prediction. Their superiority has been shown by studies in financial markets since the 1920s. Although people do not meet, they observe the outcomes of actions by others and draw upon related information to make their decisions. For example, he explains why it is that even for popular restaurants, demand tends to match supply. Although I struggled to see how some of Surowiecki's studies related to his conclusions, the studies were always interesting.

Outside of finance and sports, there have been few comparative studies on the value of prediction markets. The future looks promising, however. Surowiecki reports that some companies are using prediction markets for such things as new product sales. Since predictions for such problems are typically made in traditional meetings, I would expect prediction markets to produce more accurate forecasts.

Hopefully, *Wisdom of Crowds* will lead some companies to consider the use of prediction markets. Technology should not pose a barrier. Organizations that I have been involved with frequently include someone who is willing to set up a betting market for sporting events.

Nominal groups (Including Delphi)

In nominal groups, judgments are collected from a group of experts and are summarized by a group facilitator.

Surowiecki relied on suggestive and interesting but indirect evidence reacted to the value of nominal groups. (He failed to effectively use the wisdom of the crowds of forecasting researchers in his search for evidence on the value of simply combining judgments.) In Armstrong (2001), I summarized 11 comparative empirical studies on the value of combining judgmental forecasts, which, to my knowledge was an exhaustive listing of such studies. The median error of the group average in these studies was 12.2% less than that of the average expert's error.

The Delphi technique goes beyond nominal groups. It involves an anonymous collection of expert judgments by mail, Internet, or by asking people in a group to provide their written responses. Feedback about the responses and reasons is provided to the experts, with one or more additional rounds to follow. The feedback always involves a summary of the group's estimates, and it usually involves information about the reasons for the estimates. This procedure is done for at least two rounds.

Rowe and Wright (2001) found that Delphi improved accuracy over traditional groups in five of the studies, harmed accuracy in one, and was inconclusive in two. Using an alternative benchmark, they found it was more accurate than one-round expert surveys for 12 of 16 studies, with two ties and two cases in which Delphi was less accurate. Over all of these 24 comparisons, Delphi improved accuracy in 71% and harmed it in 12%. I was unable to find any published studies that compare prediction markets with Delphi. Freeware for Delphi is provided at forecastingprinciples.com. Usage of this freeware has increased substantially in recent years.

Virtual teams

Virtual teams allow for a freer flow of information than in markets or nominal groups. Members of virtual teams can use mail, email, and web sites to circulate information. Phone calls should only be used in dire emergencies, and there should be no conference calls or video conferencing. Contributions are identified. These procedures remove some but not all biases (e.g., how a person looks, body language, how loud a person talks). It also allows time for people to think before responding. Finally, it provides a record of what was done.

Despite its growing popularity, brought on largely by the Internet, I was unable to find comparative studies on the value of virtual teams. However, based on related research summarized by Surowiecki, along with evidence that people can read *and understand* complex material much faster when it is written (e.g., Chaiken & Eagly 1976), I expect that virtual teams would be much more effective than face-to-face groups.

A prediction case

Can you predict the results of the following experiment? To solicit useful feedback on research studies, a group of 160 experts was provided with research papers, one paper per expert. The experts were randomly divided into two treatment groups. In treatment A, ten groups of eight experts participated in 80-minute meetings, where authors of each of ten studies presented their paper and addressed questions. (Each group heard only one study.) In treatment B, each subject in the nominal groups of eight experts worked alone and without interruption for 80 minutes on one of the ten papers. These experts wrote comments in the margins of the papers. In effect, the intent was to have equal amounts of time spent on each paper. Which treatment, A or B, produced more useful suggestions? In which treatment did the authors of the study use the suggestions most effectively? ____A or ____B?

Unfortunately, there is little research about which methods of combining expert judgments are most creative, most accurate, least expensive, and most acceptable. For example, no empirical comparisons have been made among prediction markets, Delphi, and virtual teams. In fact, the above study has not been conducted. Based on related research, however, I am willing to bet that the Treatment B (nominal groups) would be vastly superior to Treatment A (traditional groups) in terms of producing useful, accurate and creative ideas, and that acceptance by the authors of the papers would be much higher. On the other hand, such findings would be upsetting to managers who place great faith in the appearance of work (e.g., being on committees, going to meetings and conferences, sitting in one's office, talking, writing papers) rather than in discovering, analyzing or planning (unusually done in isolation).

Are face-to-face meetings useful under some conditions?

Are there conditions under which meetings contribute to forecasting or decision-making? I speculate on two possibilities. The first is when the experts cannot read. The second is when it is important to gain commitment to decisions. With respect to the later condition, one must be concerned not only with the quality of a decision but also with its acceptability. Would a feeling of involvement in a group decision lead to higher acceptability when the group has made a forecast or decision? The third possibility is that very small groups, say two people, may benefit. This approach seems to work well in advertising.

Unfortunately, although I have circulated my paper for comments from email lists and from other researchers, I have been unable to obtain evidence to support the use of face-to-face groups under these or any other conditions.

Face-to-face meetings may meet people's needs for socializing. Magne Jørgensen (personal communication) mentioned one company that did away with face-to-face meetings for their projects, replacing them with emails. To meet people's need for meeting and talking, they sponsored social events.

Conclusions

Evidence-based principles exist for running effective face-to-face meetings effectively. But they are used so rarely that we must turn to practical solutions. A pattern of evidence suggests that prediction markets, nominal groups, and virtual teams allow for a more effective use of the wisdom of people in a group.

Each of us can take actions to reduce the amount of time spent in face-to-face meetings. If people in your organization do not know how to respond without meetings, you can bring them together in a room and then use structured procedures that simulate nominal groups, as described by Aiken and Vanjani (2003). For example, you could ask for a short "time-outs" during meetings and ask everyone to write their ideas.

Software is also available for conducting structured meetings. These procedures are gaining increasingly widespread use in organizations.

Perhaps the most surprising thing is that we rely heavily of face-to-face meetings, an expensive strategy, when it so difficult to find evidence to support their use. Given the evidence to date, I have adopted a policy to spend less time in traditional meetings. I am hopeful that my organization will recognize me for my forward-thinking approach.

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