



Why Should I Trust Your Forecasts?

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PREVIEW *Mistrust is a serious problem for organizations. So much has been written about functional biases and misaligned incentives that one wonders how anyone can trust a forecast provider. Well, now we have some studies that shed new light on the factors that can build or impede trust in forecasting. In this article, Sinan, Dilek, and Paul discuss the latest research findings on the steps you can take to improve trust and reduce dysfunctional behavior in the forecast function. Their conclusions offer a check list of steps to eliminate or at least minimize the element of mistrust in your forecasts.*

INTRODUCTION

Let's say you're sitting comfortably at your desk, sipping your coffee and preparing to plan your company's production levels for the following month. You begin first by examining the forecast report that's just been e-mailed to you. This report exhibits the predicted demand levels for the coming month. Suddenly a question pops into your head that, once there, just doesn't seem to want to go away: "Do I really trust these forecasts enough to base all my plans on these numbers?"

TRUST AND FORECASTING

In everyday language, we use the word "trust" so frequently and casually that we sometimes forget what it actually means and entails. According to the *Oxford English Dictionary*, to "trust" something is to have a "firm belief in the reliability and truth" of that thing. This implies that when we trust a forecast, we strongly believe the prediction is reliable and accurate.

But a mere strong belief is not enough to embrace the word's entire scope. Having that belief also means accepting certain consequences. For instance, when we use "trusted"

forecasts and base our managerial decisions on them, we automatically shoulder the responsibility for those decisions, which includes admitting the possibility that these forecasts may be flawed. Of course, we would rarely expect any forecast – even one that we trust – to be totally accurate. We would, however, expect a trusted forecast to make the best use of available information, to be based on correctly applied methods and justifiable assumptions that are made explicit, and to be free of political or motivational biases (Gönül and colleagues, 2009). Overall, we would expect it to be a competent and honest expectation of future demand.

Trust, therefore, involves risk, because it makes us vulnerable to negative consequences if our trust is misplaced (Rousseau and colleagues, 1998).

THE DETERMINANTS OF TRUST

What are the key factors that determine whether we should trust a forecast? There is general agreement among researchers that one factor is our **perception of the goodwill of the forecast provider**. If decision makers believe that the forecaster providing the predictions is striving to do his or her best



Key Points

- While we rarely expect a forecast that we trust to be totally accurate, we do expect it to make the best use of available information and to be based on correctly applied methods and justifiable assumptions: in short, to be a competent and honest expectation of future demand.
- A key factor in whether we trust a forecast is our perception of the goodwill of the forecast provider. If decision makers believe that the forecaster is striving to do his or her best to provide reliable and accurate predictions, then we are more likely to trust that source. We will be less trusting if we perceive that the forecasts are influenced by the forecast provider's agenda, which differs from ours.
- Explanations are also key in building trust, conveying the justification and rationale behind a given prediction. Through this information, we users can build our perceptions about the competence, benevolence, and integrity of the forecasting source.
- Trust reduces overrides. There is evidence that greater levels of trust are associated with a reduction in our tendency to engage in forecast adjustments.

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For example, Adam Gordon (2008) discusses "future-influencing" forecasts that are used to try to achieve the future the forecast provider wants, rather than representing their genuine belief of what the future will hold. Forecasts by pressure groups that a new tax will drive companies out of business or that a new technology will treble cancer deaths

may be of this type. Providers may also have other motivations. Within a company, forecasts provided by the marketing department may be perceived to be biased downwards so that the department looks good when sales regularly exceed forecasts (Goodwin, 1998).

If you are an intended recipient of a forecast, one indication that the forecast providers might share your agenda is their use of language which is familiar to you and free of jargon. In a study we recently concluded (Goodwin and colleagues, forthcoming), people trusted forecasts more when they were presented as "best case" and "worst case" values rather than as "bounds of a 90% prediction interval." In some situations, **managers who are not mathematically inclined may be suspicious of forecasts presented using technical terminology and obscure statistical notation** (Taylor and Thomas, 1982). Such a manager may respect the forecast provider's quantitative skills, but simultaneously perceive that the provider has no understanding of managers' forecasting needs – hence the manager distrusts the provider's forecasts.

Another critical factor is the **perceived competence or ability of the forecast providers**. In some cases, decision makers may prefer to entrust the job of forecast generation to professional forecasters, believing that they have more technical knowledge and insights. Sometimes this trust may be misplaced. People who confidently portray themselves as experts may be highly trusted – while an examination of their track record would reveal that, in fact, they may perform no better than chance (Tetlock, 2005).

In general, it appears that people just are not very good at assessing the competence of forecasters. A forecaster's reputation may be destroyed by one isolated bad forecast that people readily recall, even though the forecaster's overall accuracy is exemplary. In unfortunate contrast, one surprisingly accurate forecast of a major event that no one else foresaw will probably promote a poor forecaster to the status of a seer, thus eclipsing a

record of wild inaccuracy (Denrell and Fang, 2010). If, for example, you correctly predicted the financial crisis of 2008, your forecasts are likely to be trusted without question, even if your past forecasting history suggests you generally have trouble foreseeing what day of the week follows Tuesday.

Of course, many forecasts originate from computers, not human beings. Do we trust computers more? It seems not. In a recent study (Önköl and colleagues, 2009), identical forecasts of stock market prices were presented to two groups of people, together with a graph depicting the stock price histories over time. One group was told that the forecasts emanated from a statistical algorithm – the other, that they came from a financial expert (who, in fact, was the true source). When the groups were asked if they wanted to adjust the forecasts to make them more reliable, people made significantly larger changes to the forecasts that they thought came from the statistical algorithm – this despite the fact that the performance of experts in stock market forecasting is famously poor.

Future research is needed to see if attempting to give the computer systems human qualities, or creating a digital “persona,” will improve trust perceptions. However, some research suggests that **trust can be improved if the computer system provides an explanation of its forecast**. Explanations have been a feature of expert systems since their inception (Önköl and colleagues, 2008). Through explanations, providers can convey their justification and rationale behind a given prediction, and through this information, users can build their perceptions about the competence, benevolence, and integrity of the forecasting source.

Researchers also observed (Gönöl and colleagues, 2006) that the higher the perceived value of the explanations, the higher the level of acceptance of the forecast. Interviews with the users participating in these studies revealed that they enjoyed receiving explanations. The explanations provided “stories” that made the forecasts more “believable.”

TRUST AND ADJUSTMENTS TO PROVIDED FORECASTS

Is the level of trust that people say they have in a set of forecasts (be they statistical or managerial) reflected in the way they treat these forecasts? Not surprisingly, **it appears that greater levels of trust are associated with a decreasing tendency to adjust the forecasts**.

Communication between forecast users and forecast providers is critical. It is through open communication channels that users can express their expectations and receive cues to evaluate the prediction source in order to decide whether to trust or not to trust.

However, the correlation is not perfect (Goodwin, forthcoming). Sometimes people may indicate a high level of trust and still go on to make big adjustments to the forecasts they receive. It seems that trust is only one factor determining forecast-adjustment behavior. This may be because separate and distinct mental processes are associated with assessing trust and judging the extent to which forecasts need to be adjusted (Twyman and colleagues, 2008). Trust assessments may originate from conscious and reflective thought processes and involve explicit thinking about whether we should trust what we are offered or not. On the other hand, when we make judgmental adjustments to forecasts there is plenty of evidence (Kahneman, 2011) that we unconsciously use heuristics – that is, intuitive “rules of thumb.” These may lead to different levels of adjustment, depending on the nature of the data we are given and the way it is presented. Whatever their cause, these discrepancies mean that people may treat two forecasts differently, even when they have told you they have the same level of trust in them.

THE NEED FOR OPEN COMMUNICATION CHANNELS

All these points indicate that communication between forecast users and forecast providers is critical. It is through open communication channels that users can express their expectations and receive cues to evaluate the

prediction source in order to decide whether to trust or not to trust. The forecast providers might have benevolent intentions, might uphold similar principles, might be very skilled and experienced about generating predictions, and might indeed offer very accurate forecasts. But if they cannot effectively convey this information to their users and learn what the users are actually expecting, then all of these good qualities will be in vain.

Being transparent about general accuracy over a long period will reduce the tendency for users to make judgments on the basis of a single forecasting triumph or disaster. If this accuracy can be demonstrated relative to a reasonable benchmark, then so much the better. In very unpredictable situations, this will help to show that relatively high forecast errors are unavoidable and not a result of the forecaster's lack of competence. Being transparent about assumptions, and even presenting multiple forecasts based on different assumptions, will most likely reassure the user about the integrity of the provider.



Revealing previous assignments and giving information about groups or clients other than the current users might also be beneficial to demonstrating intentions of goodwill. By investigating the forecaster's client portfolio, the users of forecasts can find out what sort of people the provider is working with and has worked with in the past, which helps in formulating a picture of the values and principles that are important to the provider. However, more research is needed to find innovative ways through which communications between the two sides can

be further enhanced, particularly where the forecasts are generated by statistical software.

WORKING TO EARN TRUST

So why should I trust your forecasts? The answer appears to lie in the quality of interaction and communication between the forecaster and the user. Getting this right is perhaps easier said than done, but remember these crucial points:

- Work to increase the forecast user's belief and confidence in the reliability and integrity of your forecasts, and you greatly increase the likelihood that the inevitable occasional forecast miscues will be seen as acceptable anomalies if viewed in the bigger picture.
- Affirm the forecast user's perception of your goodwill, not only by delivering the best, most accurate forecasts you can, but through reassuring the users that you share their motives and objectives and are not shoring up your own self-interest packaged as a forecast.
- Consider your audience, and take care to share information in language the forecast user is comfortable with, avoiding technical jargon and forecaster-speak wherever possible.
- Reassure the forecast user of your confidence in your systems and methods, while conveying the necessary degree of humility in your work by acknowledging that no forecaster ever gets it "right" every time.
- Be transparent about methodologies and increase user comfort levels by providing clear, cogent explanations of your forecasts.
- Let users review an honest history of your forecast accuracy levels that they can quickly assess and understand, preferably relative to reasonable benchmarks.
- Be forthcoming about your other current and past forecast clients or customers, as these relationships, by association, can help to convey to the forecast user a comforting and heartening sense of your own principles and values.

A tall order, yes – but get these priorities straight, and all the effort that you put into your forecasts is far less likely to be wasted on distrustful users. After all, creating and disseminating accurate forecasts is a hard enough job; the good news is that there are practical steps you can take to further a more trusting and trustful working environment with the people who use and depend upon those forecasts.

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