Scenario Simulation Thinking

Idea In Short

Before committing to a major investment, build three or four plausible scenarios that differ on the uncertainties you cannot control, then test each option against all of them. Favor options that perform acceptably across scenarios over options that win in one forecast and fail in the others. For financial decisions, add a simulation that varies the uncertain inputs together and reports the spread of results instead of a single number. Run the exercise in a one-day workshop with senior leaders and a facilitator, and choose signposts that tell you which scenario is unfolding. Start with your largest open capital decision and schedule the workshop within a month.

A single forecast gives leaders a comfortable number and a false sense of control. Markets shift, technologies arrive early or late, and regulators change direction. Scenario simulation thinking accepts that uncertainty and builds it into the decision. This article reviews the origins of the method, what the research says about its value, how simulation extends it, and how a team can run a short exercise without a large program.

Why one forecast fails

Pierre Wack, who ran the scenario effort at Royal Dutch Shell, described the problem in the Harvard Business Review in 1985. He wrote that the business future had stopped being stable, that it behaved like a moving target, and that no single right projection could come from studying past behavior.1 Traditional planning assumed that trends would continue, so it produced one future and prepared for it. That approach leaves a company exposed whenever the central assumption fails.

The point applies beyond oil. A plan built on one forecast looks strong only while the forecast holds. A decision tested against several futures reveals how fragile it is, and which parts of it depend on assumptions that the team has not examined.

Scenarios as a way to change minds

Art Kleiner, writing in strategy+business, describes Wack as the leader of Shell's London scenario team and the father of scenario planning. Working with Ted Newland, Wack warned Shell's leaders about the instability of the Middle East oil order, which helped the company prepare for the 1973 energy crisis.2 A later IMD article credits his work with helping Shell anticipate two oil shocks within a decade.3

Kleiner adds a detail that managers often overlook. Wack believed that scenarios did their real work by changing how executives perceived the world, which he called the gentle art of reperceiving, and he felt that Shell's workshops never sustained that shift. The lesson is that a scenario deck has little value unless it alters what decision makers notice and question.

Guarding against overconfidence

Paul Schoemaker, in the MIT Sloan Management Review, argued that overconfidence and tunnel vision distort many business decisions, and that scenario planning counters them by identifying basic trends and uncertainties and then building several possible futures.4 He pointed to experts who misjudged emerging technologies, including early leaders who dismissed the potential of airplanes in naval warfare. The same biases, he suggested, affect forecasters today.

The method works because it makes the unlikely discussable. A manager who would never forecast a collapse in demand can still describe the scenario in which it occurs, and the team can ask what it would do. That conversation often reveals cheap hedges, such as a flexible contract or a staged commitment, that a single forecast would have hidden.

From scenarios to simulation

Scenarios tell stories about a few discrete futures. Simulation handles a different problem, which is the combined effect of many uncertain inputs on a number such as net present value. David Hertz proposed the approach for capital investment in the Harvard Business Review in 1964. As later summarized in California Management Review, analysts assign a range of values to each uncertain input, a computer runs the project many times, and the spread of returns shows decision makers how risky the project is.5 The authors credited the method with flexibility and with suitability for large, complex proposals, and they cautioned

that it is costly and not simple to apply.

The two tools complement each other. Scenarios supply the structural uncertainties, such as a regulatory change or a new entrant, and simulation quantifies the range of financial results within and across them. A team can run a simulation under each scenario and compare the distributions, which shows whether a project that looks attractive on average carries an unacceptable chance of loss.

A one-day format

Classic scenario programs take months, and many executives dropped them for that reason. Alan Iny and Luc de Brabandere of the Boston Consulting Group describe a faster approach in which senior executives, guided by a facilitator, build scenarios that stretch beyond the expected, and the value lies in what the team learns while building them. Their example involved UNIFE, the European rail industry association, where a small group prepared for a one-day workshop that produced four scenarios.6

A workable agenda follows the same logic:

1. Define the decision and the time horizon
2. Select the two uncertainties that matter most and that nobody controls
3. Combine their extreme values into four scenarios and name each one
4. Test each option against each scenario and note where it fails
5. Choose the options that hold up best, and define signposts for each scenario

The exercise takes one day when the preparation is thorough. A small team gathers evidence on the uncertainties beforehand, so the workshop spends its time on interpretation instead of fact-finding.

Keeping scenarios alive

Scenarios lose value when they are filed away after a workshop. Assign an owner to each one, and agree on early signals that would show whether it is unfolding. Review the signals at a regular meeting, and update the stories when new facts arrive. Link each scenario to a standing decision, such as a budget line or a hiring plan, so that the exercise shapes real choices. When a signal appears, ask which prepared response to start. Teams that rehearse

their responses react faster and argue less when events turn, since the thinking was done before the pressure arrived.

A hypothetical walk-through

Imagine a distribution company deciding whether to build a regional warehouse. The team picks two uncertainties that it cannot control: how fast online ordering grows in the region, and whether fuel and labor costs rise sharply. Crossing the extremes produces four scenarios, which the team names Fast Lane, Costly Growth, Quiet Market, and Squeeze. The warehouse earns a strong return in Fast Lane, a thin one in Costly Growth, and a loss in Quiet Market and Squeeze.

Two alternatives appear during the exercise. The team could lease space under a short contract, or it could build in two phases. Leasing performs acceptably in all four scenarios, and phased construction holds up in three. The board chooses the phased plan with a lease option on the second phase, and it sets signposts for online order growth and operating cost. The decision changed because the team saw the weakness of the single-warehouse plan before it spent the money.

Reading the results

Look first for options that perform acceptably in every scenario. Such options rarely top any single ranking, and they protect the company against the future that nobody expected. Next, identify options that win big in one scenario and fail badly in another, and ask whether a hedge or a staged commitment could cut the downside. Finally, rank the signposts by how early they reveal which scenario is unfolding.

Signposts convert the exercise into a management tool. A team might track a regulatory calendar, a competitor's capital announcements, or a demand indicator, and it can agree in advance on the thresholds that trigger a change in plan. The agreement removes the argument that usually follows bad news, because the team already decided what to do.

Common failures

Teams make three mistakes with scenarios. They build scenarios that differ only in degree, such as optimistic, base, and pessimistic, which leaves the structure of the future

unexamined. They treat the scenarios as predictions and assign probabilities that invite a return to forecasting. They finish the workshop without changing any decision. Avoid all three by anchoring scenarios in distinct structural uncertainties, by resisting the urge to pick a favorite, and by ending the session with a list of decisions that changed.

- 1Scenarios: uncharted waters ahead
- 2The man who saw the future
- 3Back to the future: the case for scenario planning
- 4Scenario planning: a tool for strategic thinking
- 5Evaluating risky capital investments
- 6Rethinking scenarios

Summary

Scenario work replaces the question of what will happen with the question of what we would do if each plausible future arrived. The method protects against overconfidence, widens the range of futures that managers take seriously, and gives teams a shared language for uncertainty. Simulation adds discipline by turning a handful of uncertain inputs into a distribution of results that leaders can compare with their tolerance for loss. Neither tool predicts. Both improve decisions by revealing which choices hold up under pressure and which depend on a single assumption. Pick one major decision, run a short scenario exercise, and define the signposts that will tell you when to adjust.