



# Testing Strategic Decisions

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Reprinted from Line56.com, E-Business Blog 08/02/2006  
(<http://www.line56.com/articles/default.asp?ArticleID=7813>)

A recent Line56.com editorial entitled “The Demise of the Digital Economy” paints a vivid possible future in which chronically high energy prices seriously damage a growing globalized digital economy in favor of more localized, less digital commerce.

Should businesses, including e-commerce infrastructure vendors, take this alarming future seriously and strive to prepare for it? Absolutely. Should they bet their companies on it? Probably not.

Increased energy costs represents only one of a multitude of trends, events, and forces – social, political, and economic – that act *and interact* to shape markets. Equally important, businesses, governments, and consumers continually *adapt* their behaviors in response to perceived conditions and trends, attempting to maintain or improve their positions. Such interventions can strongly influence the evolution of markets over time.

For example, rising energy prices typically drive efforts to increase efficiency and conservation, and expanded investments in energy resources and technology. Similarly, market adversity stimulates capital reallocation; multi-national companies could go on buying sprees, acquiring local manufacturers to preserve their global market positions.

Will such forces and adaptive behaviors blunt or completely forestall the postulated “demise” scenario? No one knows. Countervailing forces may not be sufficiently powerful or timely. Adaptive strategies instituted by key players in a market invariably trigger effects that were unanticipated, as per the Law of Unintended Consequences. Finally, disruptive events such as technology breakthroughs, climate changes, or political crises could reshape trade and market landscapes in entirely different directions.

The bottom line is that the sky may very well fall, but probably not in the exact way – or time frame – that experts predict. All we know is that change and uncertainty about the future are ubiquitous and irreducible elements of the world. Thus, the crucial question to ask is what prudent companies should do to anticipate, and prepare for, the digital economy demise *and other* plausible futures.

Consider a methodology to address this question based on the metaphor of a test drive. A test drive offers consumers a quick, low cost means to evaluate a vehicle’s comfort and performance *before* committing to purchase it. Equally important, test drives enable you to *compare* vehicles, helping to identify the one that best satisfies your wants and needs. Test drives do not guarantee successful purchase outcomes, but they offer a widely accepted, due diligence exercise for minimizing risk in high cost purchases.



Analogously, test driving a prospective business strategy helps you to envision the likely outcomes of that proposed decision before you commit to implementing it. And comparing test drives of alternate strategies helps you identify a *robust* decision, namely one that produces good or excellent benefits, with acceptable risks, *across a spectrum of possible futures*.

Thus, validating strategic decisions via test drives promises a low risk, systematic due diligence method for positioning your business for success despite ignorance of the particular (market) future.

### **Virtual Decision Environments (VDEs)**

What kinds of decision support systems are available to test drive business strategies? Consider, for example, the category of Business Intelligence (BI) software, which includes data warehouses; query, search, and reporting tools; data visualization and predictive analytics packages; and executive dashboard systems.

In fact, BI solutions afford, at best, *situational awareness* (SA): they aggregate and enable timely access to information about current business status, past performance, and possibly limited trending. Arguably, this is sufficient to “support” tactical decisions, but only if conditions change minimally over the short-term.

However, it is difficult to see how SA can support test drives for business strategies that address futures substantially different from today, such as the digital economy demise.

Test drives for business strategies require more powerful systems, or *virtual decision environment* (VDEs). A VDE actively enables or enhances the *processes* employed to make decisions. To accomplish this, a VDE must combine a disciplined methodology for thinking about possible futures with supporting software that performs detailed “what-if” simulations and enables users to compare and analyze the projected outcomes.

Ideally, a VDE should also apply across the entire lifecycle of strategic decisions: once a strategy is selected, a VDE should help businesses implement that strategy and monitor its execution, by assessing performance and inevitable environmental changes over time. In this mode, a VDE either re-validates strategies or helps businesses detect and diagnose emerging problems promptly, and make mid-course corrections to ensure success.

### **Scenario Planning**

The leading methodology for anticipating possible futures is called scenario planning. Scenario planning helps organizations prepare for critical decisions in highly uncertain and risk-intensive environments, typically over years or decades. The technique was developed to support US nuclear defense strategists during the Cold War, and later refined for commercial use by oil industry strategists.



Scenario planning employs facilitated discussions among leaders and experts to identify the major forces driving the evolution of a target market (or society). These forces are divided into relatively predictable trends and more volatile uncertainties. The dominant uncertainties are projected to extremes (e.g., intensive vs. limited regulation) and combined to frame alternate futures. The resulting schematic futures are fleshed out using the remaining trends and uncertainties into vivid scenarios that depict key market players, their positions, and the prevailing situational dynamics. Decision makers can then use these results as baselines or targets for developing strategies to influence or respond to those scenarios for their organizations' advantage.

For example, oil companies use scenario planning to anticipate future energy needs, price structures, and sociopolitical environments. They then plan long-term investments in energy assets, production technologies, and business models in order to increase their likelihood of continued growth. Scenario planners at Royal Dutch Shell actually anticipated the emergence of a Middle-East oil cartel, and positioned their company successfully for the upheavals caused by OPEC. Similarly, military strategists use scenario planning to help envisage future threats and alliances, and then plan force structures, weapons and logistics systems capable of responding to those threats.

### **Limitations of Scenario Planning**

The value of scenario planning is widely recognized. However, the method is not applied as widely as it merits, for two key reasons – difficulty and generality.

First, developing effective scenarios requires considerable knowledge and experience to focus on the issues of direct relevance while maintaining receptivity to the unexpected. Because scenarios are so difficult to craft, businesses typically bring in outside consultants to drive these exercises, which may produce only three to five distinct scenarios. Equally important, organizations rarely revisit and update scenarios more frequently than every five years, because the process is so intense.

Second scenarios paint possible futures rather broadly; they tend to focus on general populations of market players rather than specific ones, except perhaps major government bodies (e.g., Congress, the FDA) and industry giants. In addition, the dynamics of scenarios are generally rather coarse-grained. This is quite understandable: imagine playing extended chess games that involve hundreds of distinct pieces, positions, and allowable moves. Human beings are not very adept at thinking about combinations of complex forces and player behaviors over time, a cognitive limitation that contributes strongly to the Law of Unintended Consequences.

Serious drawbacks result from scenario planning's "50,000 foot" perspective. First, scenarios are not "personalized": they generally can't answer the first obvious question that decision-makers ask, which is "What will WE (and our stakeholders) look like in this possible future?" Second, scenarios are passive: they don't help assess HOW proposed interventions, such as plans, investments, or strategies, will perform. But such projections



are precisely what are required to answer decision-makers' second key question, which is "What can we do to position ourselves for success in this future?"

As practiced today, scenario planning focuses on envisaging alternate futures rather than defining and weighing strategic responses to them. While this produces a valuable front-end framework for decision-making, it provides little support for the *process* of formulating actionable strategies and validating them across scenarios.

### **Solution: Augment Scenario Planning with Simulation Software**

These problems can be surmounted by extending scenario planning methods with supporting software tools. A robust VDE provides computer-based capabilities for:

- Modeling scenarios – *and* proposed strategies to respond to them
- Simulating the likely outcomes of candidate interventions across scenarios
- Analyzing and comparing those outcomes to identify robust decisions

Scenarios depict situational contexts – key market players, places, things, and conditions – and dynamics, which include forces, trends, events, and player behavior patterns. VDE modeling software thus personalizes traditional scenarios by populating them with specific players of interest. (VDEs mitigate the difficulty problem via libraries of predefined model components tied to specific markets, which users can select and adapt to construct scenarios.)

VDEs also enable the inclusion of prospective business strategies into scenario models, an obvious prerequisite for test drives. Finally, VDE models can encompass key performance metrics, which enable users to evaluate the strengths and weaknesses of proposed courses of action in projected scenarios.

For example, consider a manufacturer facing production capacity decisions. Situational forces include internal and industry-wide capacity, cost structures, and productivity rates; demand; regulatory and trade policies, and general economic conditions. Candidate strategies might include expanding (or closing) existing plants; building new plants; acquisitions; outsourcing; or time-phased combinations of these alternatives. Behaviors would include anticipated competitor responses to your expansion (or contraction) strategies. Key metrics might include capital investment, production capacity, turnaround time, cost per unit, operating costs, return on investment, and net present value.

VDEs support test drives via “what-if” simulation: given a scenario that projects the world evolving along path X, a VDE simulator projects the likely outcome for a company if it executes candidate strategy Y. A VDE simulation engine logs data from executing scenarios to a database, which then drives analysis of those projected outcomes. (It is beyond the scope of this article to explain *how* these modeling and simulation engines are designed. Suffice it to say that commercially available technologies exist to accomplish these tasks.)



VDEs provide dynamic query facilities that enable analysts to generate summary charts and reports for key performance metrics over time. They also enable users to drill down and isolate the changes that took place as scenarios evolved that drove those metrics (such as a new plant coming on-line or an outsourcing deal put in place). VDEs also support analytics for *comparing* metrics across alternate strategies and scenarios. As noted earlier, comparative analytics are critical for identifying robust decisions, which result in attractive positioning across diverse alternate futures.

VDEs support decision lifecycles by allowing users to update scenarios periodically to reflect current conditions and results. The current strategy is re-validated if it continues to produce attractive outcomes across updated scenarios. If it does not, the VDE acts as an Early Warning System, which helps users to isolate divergences and to adapt (or replace) the original strategy to address these emerging problems.

## **Conclusion**

Given the difficulties of predicting the future, the next best thing businesses can do is to test drive their prospective strategies using simulation-based scenario planning and VDEs. This approach enables companies to *practice* critical decisions across alternate possible futures, and *learn* from virtual rather than real mistakes. It also helps companies execute strategies by tracking their performance as the world continues to change.

VDEs extends scenario planning methods by broadening their scope, consistency, and speed, with an emphasis on detailed “what-if” projections of complex situational dynamics. VDEs thereby personalize scenario planning, make it directly actionable for business users, and minimize surprises.

Test drives highlight the strengths as well as the weaknesses of alternate strategies, allowing businesses to balance potential rewards against risks. Businesses can advance from simple risk avoidance to confidently taking measured risks, which is ultimately the only way to achieve growth and sustainable competitive advantage. In short, VDEs help companies to better decide what needs to be done today to achieve their goals tomorrow.

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