VIEWPOINT

THE SYSTEMS THINKER®
BUILDING SHARED UNDERSTANDING

VOL. 12 NO. 5 JUNE/JULY 2001

THE IMPERFECT STORM

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When the "great blizzard of 2001" in the northeastern United States failed to be in the right place at the right time, with the right degree of punch, lots of people got frustrated—even angry. Why the upset? Is shoveling snow so satisfying?

Actually, few people really looked forward to the predicted snow, ice, slush, and power outages. But in anticipation of the storm, families rushed to the food markets, companies closed down, 18-wheelers packed into rest areas on the interstate highways, and airlines cancelled flights. When the anticipated storm did not come as forecasted, many felt angry and frustrated. The storm eventually did come, but the timetable, path, and intensity were different than had been reported.

What went wrong? Nothing, really. We all made decisions based on professionally developed computer models, and we followed the voice of prudence that said, "It's better to be safe than sorry." But the storm did not act according to the model—and we were sorry that we played it so safe!

The lesson to be learned is about models and how we use them. Models are constructed to represent something—a car, an inventory system, global climate change, and so on. A model airplane is real—but it is not the airplane itself. Likewise, a model storm is real, but it is not the storm itself—it is a representation of a storm, given a particular set of assumptions about multiple, interdependent variables acting in a particular way in a dynamic weather environment.

We cannot judge models on how "good" or "bad" they are—but on how "useful" we find them. To what degree does a model help build awareness of what the future may bring and help us prepare for it? Should we bring our raingear? Buy extra bottled water and canned soup? To what degree does a model help us understand the complexity of our present reality? Can we count on a model of seasonal consumer demand to help us make decisions about production schedules and warehouse capacity?

A model's usefulness is enhanced if we can dig inside of it and understand the interplay of variables, and if we can distinguish between the quality of the model's structure and the data that is put into it. Even embarrassing uses of models can help us learn more about reality. Despite the confusion about calling the winner of the U.S. presidential race in Florida on election night, we did learn a lot about the models that the pollsters and TV stations use when predicting outcomes.

Models All Around Us

We are surrounded by models, even when we don't think of them as such. For instance, visit a new apartment complex or suburban housing development and go through a model unit. Walk through the oversized closet; spin the built-in spice carousel; envision the workshop in the extra-wide garage; smell the afternoon coffee. Maybe someday . . .

Or spend the morning at the local super hardware store. Play with the computer models in the remodeling section. See how you could renovate your tiny, 18-year-old kitchen. Gleaming cabinets could hang here; the dishwasher could move there. Choose a refrigerator that opens on the left, then one that opens on the right. Try lime walls with white trim, or white walls with lime trim. Maybe someday . . .

The models look stylish in the new summer fashions. How about a new dress, or perhaps that lavender suit. The yellow, green, and red scarf could go with just about anything. But I can't picture myself in that skimpy bathing suit any time soon. Maybe someday . . .

Models help us play around in possible future worlds without the risk involved in making a major financial investment or the risk of failure. They allow us to add or subtract variables and to change the relationship between variables. They help us *plan how to react* if some future should emerge and also to *proactively shape that future*. We might not be able to change tomorrow's weather, but we can change the scheduling of product launches to take advantage of present production capacity. Our models are useful if they help us experience a reality that we cannot otherwise take part in within the limits of our present time/space boundaries. They can help us take the "Maybe" out of "Maybe Someday" by supporting the planning process.

Different Responses to Different Scenarios

People from all walks of life create their own models every day. For example, NFL coaches conduct model drafts to create the best possible team, given certain variables. What if the Raiders go for the defensive player in the second round—should we trade down or up? Go offense or special teams? Who might be left on the

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board in the third round? Should we worry about the salary cap this year, or restructure contracts and worry about it next year?

Or a production manager might draw out the dimensions of a problem on the back of her lunch bag. She pencils in the variables, identifies the linkages, and asks questions such as: "What is causing what? Where are the delays? Are we creating our own mess? What can we change? What will happen if we do? Where is the leverage?"

We can even play corporate leader by using a computer simulation such as *Balancing the Corporate Score Card* (Harvard Business School Publishing/High Performance Systems, Inc.). Make the tough decisions and see what happens. Not satisfied? Go back and try something else.

The easy access to computers and user-friendly simulation software has given us the capacity to stretch our thinking into the future. Instead of building sandcastles on the beach, we can build—even remodel—organizational structures and see what might happen when the imperfect storms of reality come across the terrain. We can play with multiple scenarios and test the robustness of our strategies against each possible future.

For example, what would happen if we wanted to challenge our thinking about the impact of economic development on the structure of our city and county resources? What if we successfully recruit new industries into our region, or if existing employers significantly expand? How will the population expand? Will we be able to create a sustainable environment? Will the school system be able to grow to meet the needs of the increasing number of students? What about space for recreation? Will there be enough water, enough energy? Where will the talent come from? How will the workforce get to the workplace—by cars, by public transportation? Are we willing to change our tax structure to build the infrastructure to support economic expansion? Where will the delays be? We can create a variety of scenarios to help us better understand these futures and then challenge our own beliefs about how much we really want to expand.

The value of any model, including the mental models that we have in our heads about how the world works, lies in our own willingness to challenge the assumptions used to create the model—and to live in the alternative futures that models allow us to think about. So that storm last winter didn't happen in precisely the way we thought it would, based on the models we followed. But it did happen. And we were prepared. The storm model was certainly useful, even if somewhat inaccurate on this occasion. It is up to us to make our own best decisions based on models that we trust—and then continually work to refine those models if they don't always produce results we can rely on. ▪

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