

How to Build Scenarios

Planning for “long fuse, big bang” problems in an era of uncertainty.

BY LAWRENCE WILKINSON
Cofounder, Global Business Network

This article originally appeared in *Wired* “Scenarios: The Future of the Future” Special Edition, 1995.

It happens to us all. We look out into the future, trying our best to make wise decisions, only to find ourselves staring into the teeth of ferocious and widespread uncertainties. If only everything didn’t depend on, well, everything else. How do we decide what kind of career path to pursue when it’s not clear what industries will exist in 20 or 15 years? How do we plan our children’s education when we can’t know what sort of society they’ll live in? As we face each of these problems, we confront a deeper dilemma: how do we strike a balance between prediction—believing that we can see past these uncertainties when in fact we can’t—and paralysis—letting the uncertainties freeze us into inactivity.

The senior managers of large corporations face a similar dilemma, but they often carry the additional weight that on their decisions rest the livelihoods of thousands. The cliché is that it’s lonely at the top. But for most managers these days, the bigger problem is that it’s confusing up there. It’s no longer enough simply to execute, to “do things right.” Like us, senior executives have to choose the right thing to do: set a course, steer through the strategic issues that cloud their companies’ horizons. Do we or don’t we buy that competitor? Build that semiconductor fab plant? Replace the copper in our network with fiber? Or wait and save billions?

Questions like these are known as “long fuse, big bang” problems. Whatever you decide to do will play out with a big bang—often a life or death difference to an organization—but it can take years to learn whether your decision was wise or not. Worse yet, “long fuse, big bang” questions don’t lend themselves to traditional analysis; it’s simply impossible to research away the uncertainties on which the success of a key decision will hang.

Still, like us, the managers must make a decision—and make it now. The rest of the stampeding world will not wait until certainty appears. Anything that can help make a decision in the midst of uncertainty will be valuable. One such tool is scenario planning. A growing number of corporate executives are using scenario planning to make big, hard decisions more effectively. And

it’s not just for bigwigs: scenario planning can help us at a personal level as well.

Scenario planning derives from the observation that, given the impossibility of knowing precisely how the future will play out, a good decision or strategy to adopt is one that plays out well across several possible futures. To find that “robust” strategy, scenarios are created in plural, such that each scenario diverges markedly from the others. These sets of scenarios are, essentially, specially constructed stories about the future, each one modeling a distinct, plausible world in which we might someday have to live and work.

Yet, the purpose of scenario planning is not to pinpoint future events but to highlight large-scale forces that push the future in different directions. It’s about making these forces visible, so that if they do happen, the planner will at least recognize them. It’s about helping make better decisions today.

This all sounds rather esoteric, but as my partner Peter Schwartz (see “The New World Disorder,” page 104) is fond of saying, “scenario making isn’t rocket science.” He should know. Not only did he help develop the technique back in the 1970s, but he’s also a rocket scientist.

Scenario planning begins by identifying the focal issue or decision. There are an infinite number of stories that we could tell about the future; our purposes is to tell those that matter, that lead to better decisions. So we begin the process by agreeing on the issue that we want to address. Sometimes the question is rather broad (What’s the future of the former Soviet Union?); sometimes, it’s pretty specific (Should we introduce a new operating system?). Either way, the point is to agree on the issue(s) that will be used as a test of relevance as we go through the rest of the scenario-making process.

As managers of our own lives, we can do the same exercise. Let’s say that our key concern is the quality of life that we’ll have in 15 or 20 years and the personal investments that we’ll need to make in preparation for the future.

We breathe in: driving forces

Since scenarios are a way of understanding the dynamics shaping the future, we next attempt to identify the primary “driving forces” at work in the present. These fall roughly into four categories:

- Social dynamics—quantitative, demographic issues (How influential will youth be in 10 years?); softer issues of values, lifestyle, demand, or political energy (Will people get bored with online chatting?).
- Economic issues—macroeconomic trends and forces shaping the economy as a whole (How will international trade flow and exchanges rates affect the price of chips?); microeconomic dynamics (What might my competitors do? How might the very structure of the industry change?); and forces at work, on or within the company itself (Will we be able to find the skilled employees we need?).
- Political issues—electoral (Who’ll be the next president or premier?); legislative (Will tax policies be changed?); regulatory (Will the FCC loosen its grip on radio spectrums?); and litigative (Will the courts break up Microsoft).
- Technological issues—direct (How will high-bandwidth wireless affect land-line telephony?); enabling (Will X-ray lithography bring in the next chip revolution?); and indirect (Will biotech allow easy “body hacking” and thus compete with more traditional forms of entertainment?).

Of course, categories are only handles. Real issues entail a bit of all four forces. The point of listing the driving forces is to look past the everyday crises that typically occupy our minds and to examine the long-term forces that ordinarily work well outside our concerns. It is these powerful forces that will usually catch us unaware.

Once these forces are enumerated, we can see that from our own viewpoint, some forces can be called “predetermined”—not in a philosophical sense, but in that they are completely outside our control and will play out in any story we tell about the future. For instance, the number of high school students in California 10 years from now is more or less predetermined by the number of elementary school children now. Not all forces are so evident, or so easy to calculate, but when we build our stories, predetermined elements figure in each one.

Scenario logics

After we identify the predetermined elements from the list of driving forces, we should be left with a number of uncertainties. We then sort these to make sure they are critical uncertainties. A critical uncertainty is an uncer-

tainty that is key to our focal issue. For instance, will the percentage of women in the work force continue to increase? Our goals are twofold—we want better to understand all of the uncertain forces and their relationship with each other. But at the same time, we want the few that we believe are both most important to the focal issue and most impossible to predict to float up to the surface.

At first, all uncertainties seem unique. But by stepping back, we can reduce bundles of uncertainties that have some commonality to a single spectrum, an axis of uncertainty. If we can simplify our entire list of related uncertainties into two orthogonal axes, then we can define a matrix (two axes crossing) that allows us to define four very different, but plausible, quadrants of uncertainty. Each of these far corners is, in essence, a logical future that we can explore.

(We could, of course, spin hundreds of scenarios from combinations of our forces, but experience teaches that fewer are better. The right one, two, or three axes give us a very effective framework in which to explore all of the other forces.)

Wired staff developed, as an illustration, the following matrix as one set of scenarios for the future. The question: What will be the general tenor of commercial life on a global scale in the year 2020? (see chart)

The first (horizontal) axis of uncertainty is the character of our desire, an “I” or “We,” individual or community.

This uncertainty about the quality of our individual hopes and intentions cuts at the most fundamental level: Will the energy of democratization and the ascendance of the ultimate individualized “I” continue to prevail? Or will our social organization and self-definition be rooted in a group—a nation, a tribe, a collection of users of a particular brand, a more communitarian “We”? The I or the We will never disappear, but which will come to be the prevailing influence in our culture? It could go either way, and with a bang; that is the uncertainty.

The second (vertical) axis shows the uncertain character of social structure: Will society be a center that holds and provides stability, or will it fragment?

Here, we stake out the extreme possibilities of social organization: Will social and political structures (either new or traditional) provide a society-wide coherence and order? Or will society shatter into shards, the jagged edges of which do not mesh into a coherent whole? Will there be a state to impose order, level the playing field, and unify a commonwealth? Or, will permanent fragmentation, increasing plurality, and unfettered free-marketism bring us to “bottom-up” functioning anarchy?

FRAGMENTATION

Scenario 1:

I Will

The world fragments into a working pandemonium of individuals, organized by jobs rather than geography. Communication is pervasive and focuses on personal empowerment. The Net becomes the chief exchange medium for decentralized work, personal gratification, and global commerce. Physical infrastructure in North America stagnates, while personal spaces thrive. Art and attention are turned inward, as personal expression flourishes in new media and old public spaces crumble. Technology is the global culture. The have-nots become the have-lates. Ethnic or group differences give way to a homogenized patchwork of unbridled individual variety. Europe is wracked with civil strife as its socialistic civilization unravels. Russia rebounds. Japan lags. China and the developing countries become huge flea markets where just about anything goes.

Scenario 4:

New Civics

The world settles into small, powerful city-states. Rural areas of the world are second-class, but have widespread virtual hookups. Europe fractionalizes into 57 countries; China, Russia, Brazil, and India also devolve into black market ethnic states. Gangs in developing countries and old inner cities transform into political law-and-order machines. Citizens use networks and databases to watch over and protect each other. Average life spans increase dramatically; general health improves. Civic pride blossoms. Governments use advance technologies to create the largest public works yet, both citywide and global. Corporations are reigned in by civic regulations, although they increase in size—there's the Fortune Global 5,000. Conglomerates fund most of the UN-type activities.

INDIVIDUAL

COMMUNITY

IN SCENARIO MAKING, WE CAN CREATE A MATRIX (TWO AXES CROSSING) THAT DEFINES FOUR VERY DIFFERENT, BUT PLAUSIBLE FUTURES. FOR INSTANCE, IF THE FUTURE IS ONE CHARACTERIZED BY COMMUNITARIAN DESIRES BUT DECENTRALIZED SOCIAL STRUCTURES, WE GET ECTOPIA.

Scenario 2:

Consumerland

The world is populated by consumers rather than citizens. Technology breeds unlimited customized choices. The consumer is served by highly evolved companies, aggressively nimble and conscientious of the market's whims. Computers do increasing amounts of white-collar work. Manufactured products are heavily personalized, but do-it-yourself dies. Real leisure increases; dissent withers. Politics means electronic voting. Governments are virtual corporations, with their heavy lifting privatized to commercial ventures. The have-nots are given spending vouchers. Southeast Asia and the coast of China manufacture most of Consumerland's goods, and consume almost half themselves. Latin America is their branch office. Japan gets richer and unhappier. Russia exports trouble in the form of neoreligious cultists and mafioso. The US and Europe become huge theme parks.

Scenario 3:

Ecotopia

The world slows the growth of development. In reaction to earlier decades of high crime and chaos, communitarian values triumph over strictly individualistic ones. Slimmed-down and digitized governments win the trust of people. Directed taxation funds public works, some of them large-scale. Corporations adopt civic-responsibility programs out of long-term economic self-interest. Technology, such as online shopping, makes urban living very resource-friendly. Net access is a subsidized right. Dirty technologies are outlawed, forcing less-developed countries to leapfrog to clean and light technologies, if they can. Initially, this widens the gap between rich and poor nations. Europe erupts into a second renaissance, becoming a moral beacon. Japan mobilizes not much later. The Islamic world awakens. Asia and Latin America become lifeboats for the young and restless of the developed world who find the environmentalism and communitarianism too dogmatic; they settle in "free economic zones," where their migration and energy help to vitalize growth. North America stumbles as its cowboy individualism is tamed.

COHERENCE

Our second uncertainty might seem at first blush an outcome of the first. But in fact, while they're related, they're separately uncertain. Indeed, it's precisely the way they're intertwined that makes them interesting by giving us four scenarios, four very different "future spaces" to explore.

Fleshing out the scenarios

We return to the list of driving forces that we generated earlier; these dynamics become "characters" in the stories that we develop. Our goal is not to try to tell four stories, one of which—we hope, as futurists—will be true. Instead, we recognize that the "real" future will not be any of the four scenarios, but that it will contain elements of all of our scenarios. Our goal is to pin down the corners of the plausible futures. These corners are exaggerated—the outer limits of what is plausible. Thus, our scenarios will have a near-caricature quality.

Here's how the Wired scenarios play out in each of the four corners:

I Will is the quadrant where individualism (I-ness) meets fragmentary or marginal control by large organizations. It is a future in which you want and get the ability to make your life uniquely yours. The Net is the ubiquitous medium through which you realize your desires and discharge your few and relatively unimportant social duties. Government has withered in the face of privatization, replaced by a largely electronic marketplace that connects and clears transactions of every type. Most large, centralized institutions have crumbled into a much more finely grained pattern, a many-to-many landscape on which each individual is alternately producer and user. In this future, you co-produce the products and experiences that you consume. Your loyalty is to your tools, knowledge, and skills.

Consumerland is the quadrant where individual desires meet a social and corporate center. It is a future in which everyone is the ultimate consumer, possessed of almost infinite choices. The Net is again a ubiquitous medium—but a medium through which corporations deliver marketing messages tailored directly to your unique preferences, via personal catalogs, personalized ads and coupons, and the like. The products, of course, are "mass customized" to your desires. Government plays an active role, laying down the rules (standards, regulations) by which corporations play. Social organizations proliferate but it is clear that they serve individual yearnings. The citizen becomes a consumer—served by society.

Ecotopia is the quadrant where a communal sense of "We" meets a strong social center. It is the future where the center holds. Government plays a large role in sup-

porting the commonwealth, but more important than government is the emergence of widely shared ecological values. These are not coercive values but a voluntary embrace of cohesion, cooperation, and reduced consumption, backed by legislation and even corporate policies. The Net acts as replacement technology; it's maximized to eliminate the need to travel on business, to cut down on the amount of paper used, etc.

New Civics is a future in which values are shared but in many small, competing groups. It is a decentralized world of tribes, clans, "families," networks, and gangs. It is a future in which we want to build and enjoy the benefits of community but without the help of a benevolent Big Brother government. The Net encourages each group to move most of its members' economic activity and their social services inside a closed group. Thus, government's role and influence are eclipsed by the sway of these emergent groups; small—often deadly—conflicts among groups pop up continually around the globe. Our primary concern is to be good members of our group. Our loyalty is to its membership, its mores, and its brands. While this future conjures visions of pride, heroism, and the satisfactions of belonging.

Note that the scenarios don't fall neatly into "good" and "bad" worlds, desirable and undesirable futures. Like the real life from which they're built, the scenarios are mixed bags, at once wonderfully dreadful and dreadfully wonderful.

The implications of our scenarios

Given that we don't know which scenario will unfold, what do we do to prepare?

Some of the decisions we make today will make sense across all of the futures. Others will make sense only in one or two. Once we've identified those implications that work in all of the scenarios, we get on with them in the confidence that we're making better, more robust plans. The decisions that make sense in only one or some of the scenarios are tricky. For these we want to know the "early warning signs" that tell us those scenarios are beginning to unfold. Sometimes, the leading indicators for a given scenario are obvious, but often they are subtle. It may be some legislation or technical breakthrough, or gradual social trend. Then, of course, it is important to monitor these critical signs closely.

Ultimately, that's the power of scenario planning. It can prepare us in the same way that it prepares corporate executives: It helps us understand the uncertainties that lie before us, and what they might mean. It helps us rehearse" our responses to those possible futures. And it helps us spot them as they begin to unfold.