

The New York Times

THE NEW YORK TIMES, THURSDAY, JUNE 24, 1999

Plotting Corporate Futures

Biotechnology Examines What Could Go Wrong

By BARNABY J. FEDER

ST. LOUIS — Whether he is writing books, lecturing at universities or lobbying regulators and politicians, Jeremy Rifkin never misses a chance to argue that the biotechnology industry is leading the world toward environmental and social disaster. If he thinks it will help slow the industry down, he is quick to file lawsuits and promote boycotts or moratoriums.

But last week, the activist who was once described by critics as the “abominable no-man” took on another role. Intrigued by an invitation to an industry meeting at one of biotechnology’s inner sanctums, he happily trekked to the headquarters of the **Monsanto** Company here to offer up his vision of the future. “I’ve never been to a meeting like this in the 23 years I’ve been talking about these issues,” he said.

It was not Monsanto’s idea to seek his input, as the company was quick to tell anyone who asked. The 54-year-old Mr. Rifkin was called in by Ulrich Goluke, a consultant hired by Monsanto and 13 members of the World Business Council for Sustainable Development, to help them paint a portrait of the biotechnology landscape of the year 2030 and how it



Shana Raab for The New York Times

Jeremy Rifkin, a critic of biotechnology, attended a story-building conference at Monsanto headquarters.

evolved.

The exercise, known as story building, or more formally as scenario creation, is a specialized form of crystal-ball gazing that big corporations in the United States and abroad are increasingly turning to as an early warning system for how their strategies could go astray.

“Every child knows you get the really big issues across with stories,” Mr. Goluke said.

In contrast to more common corporate planning tools like forecasting, story building typically results in two to four contrasting visions of the future. Each turns on assumptions about public reactions to political surprises, industrial accidents or social disruptions that never show up in today’s spreadsheets and five-year business plans. Outside participants like Mr. Rifkin, who was reimbursed for his expenses but received no compensation, are known as provocateurs by those designing the projects.

“Our aim is to think the unthinkable and speak the unspeakable, not to say what we think will or should happen,” said Patricia Solaro, a public affairs executive from Hoechst A.G. of Germany who attended the four-day meeting. Scenario creation was originally

Contemplating the Year 2030 Problem

The biotechnology industry has developed insect-resistant crops and blockbuster drugs. But critics are raising concerns about threats to health and the environment, prompting the industry to think hard about where it is heading. Lately, corporations have borrowed an approach used by the Federal Government during the cold war to try to make sense of the future.

developed for the Federal Government in the 1950's at the Rand Corporation to study how nuclear wars might start. It was popularized as a business tool by Shell Oil in the 1970's. Shell's planners, armed with descriptions of how consumers and countries might react to oil shortages, for example, were better equipped than many of their competitors to deal with the shock of the oil crisis of 1973 and its aftermath.

Biotechnology companies see plenty of reason to worry about unpredictable setbacks these days. While genetically engineered crops like soybeans and corn and a number of drugs have been commercial hits, critics are stepping up their efforts to portray the advances as fraught with threats to human health and the environment.

Just last month, they seized on a report suggesting that the monarch butterfly caterpillars and some beneficial insects might be much more vulnerable to a natural pesticide produced by genetically engineered corn than the industry had acknowledged.

And food scares in Europe over "mad cow's disease," dioxin and Coke, though unrelated to biotechnology, have fanned consumer worries about food purity and given a boost to the organic-food movement.

The result has been a crisis of confidence in the industry. The companies still believe in the promise of the technology but now wonder whether they will be able to convince regulators and the public that the benefits outweigh the risks.

The meeting here was a follow-up to a session in April at Hoechst's headquarters in Frankfurt. Participants included not just biotechnology

giants like Monsanto, DuPont and Novartis, but also newcomers like International Paper and Norsk Hydro, as well as Zurich Financial Group and Swiss Re from the insurance sector and the consumer products heavyweights Procter & Gamble and Unilever.

The scenarios being developed will not be finished before the end of this summer. The job of polishing them into compelling narratives of about two pages has been handed to Betty S. Flowers, a University of Texas poetry and literature professor.

Mrs. Flowers, who studied with the late Joseph Campbell, the noted authority on myths and stories, is highly sought after in scenario circles for her ability to shape the jargon of engineers and executives into crisp, easy-to-recall narratives that highlight turning points in each vision.

The companies meeting here turned down a reporter's request to sit in on the discussions, but Mr.

A cold war tool takes hold in biotechnology.

Goluke, Mrs. Flowers and several other participants shared some of their impressions afterward. Three basic stories are being developed, they said.

In the first, none of the critics' warnings about health and environmental hazards prove warranted and biotechnology products gain widespread acceptance. It is not a happily-ever-after story for the companies, though, because success brings wide-ranging consequences and challenges.

This scenario may include examples of the social and political impact of large numbers of people living

past the age of 100, such as pressures to divert public spending and product development to the needs of the elderly. Some biotechnology products in the story might become unprofitable because they become so widespread that they turn into low-margin commodities.

A second scenario is likely to reflect chaos theory, which holds that complex systems can be changed radically by tiny disruptions that have dramatic ripple effects. This story might turn on an event such as publication of a small research report attributing an environmental setback to genetically engineered crops. This in turn could kick off a string of public reactions leading to drastic regulations that stifle many biotechnology applications. A Presidential candidate who is courting environmentalists could be cast as the leader of the anti-biotech charge.

One plot twist in this story proposed in last week's conference was to make the perceived threat to the environment the result of faulty research. The lesson for the industry: the same science that serves you so well can trip you up in the hands of critics.

In the third story, which might be summarized as "thanks but no thanks," consumers and financial markets decide that most biotechnology applications simply are not as appealing as the alternatives. Insurers balk at liability risks and investors flee the industry's meager returns. Agricultural biotechnology

markets shrink as farmers and consumers embrace organic food. Biotechnology becomes a tool to improve breeding techniques rather than to move genes among different species.

At the same time, health care companies conclude there is limited profit in engineering new drugs and in harvesting organs for transplants in humans from genetically engineered animals. Instead, they use their expertise to analyze people's vulnerability to certain diseases and then reap profits from advising people how to avoid getting sick.

The practical value of creating such stories is hard to prove. Skeptics say it is so speculative as to be almost meaningless. Some say scenarios are most useful if they focus on near-in challenges, such as what happens if a big contract goes to a competitor.

"It's rare that they become a core part of the internal decision-making process, which tends to end up looking at things like return on investment," said Kevin Coyne, a consultant at McKinsey & Company.

But proponents argue that unlike forecasts well-designed stories of the future can alert business and political leaders to warning signs they might otherwise miss.

"If you are working on things that take 10 to 15 years to develop, you want to think about what the public policy environment will be when those investments are supposed to pay off," said Thomas Jorling, a senior policy executive at the International Paper Company who attended the Monsanto talks.

The World Business Council, the Geneva-based coalition of 125 multinationals that organized the Monsanto conference, is a major forum for corporate story-building. It currently has other scenario groups looking at energy and electronics. The General Motors Corporation is leading 25 companies in a council project focused on sustainable growth in the United States.

Other consulting firms are marketing similar projects. Global Business Network, a scenario specialist based in Emeryville, Calif., and the accounting firm of Ernst & Young are currently recruiting participants for a biotechnology scenario project looking out just 10 years. Monsanto, Eli Lilly & Company and Cargill Inc. are among the early sponsors, according to Peter Schwartz, the chairman of Global Business.

Northeast Consulting in Boston specializes in scenario work for information-technology companies. Cambridge Energy Research Associates in Cambridge, Mass., is known for energy and political scenarios, like its look at Russia in 2010. The Institute for the Future, based in Menlo Park, Calif., pioneered such work for nonprofits.

Mr. Rifkin said he found the process fascinating but was unsure what to make of it.

"I have to say I was really impressed by the ability of the people here to put aside their assumptions," he said. But he did not expect it to signal the end of his battles with the industry or bury their mutual scorn.

As he headed off to Washington, where he is president of the Foundation on Economic Trends, Mr. Rifkin predicted that the "thanks but no thanks" story of biotechnology's decline was closest to the mark and that most of the biotechnology giants in the group that met here would fail to adapt in time to avoid being pushed aside by nimble upstarts.