

to capture new opportunities, and lose market share to the benefit of smaller, newly emerging players, which have no dominant position in their sector.

If applied to research-based innovation projects, portfolio strategies consider that a fairly large, diversified set of investments should allow a positive outcome, even if most projects were to fail. This happens because of high returns coming from a few successful projects, standing far above the average. Chapter Four (*More Ways to Fail Than to Succeed . . .*) addresses the question if—and in which cases—portfolio strategies represent a profitable choice, and reviews the alternatives available to manage the risk of both technical and market failure. The same two case studies introduced in the first chapter appear again to complement the section, and are analyzed in depth.

The essay that follows (*Technology Policy for a World of Skew-Distributed Outcomes*, by F. M. Scherer and Dietmar Harhoff) is strictly related to the latter chapter. It demonstrates how for a given sample—using a series of Monte Carlo simulations—returns from innovations are “skew-distributed” (mostly log-normal), and proves the limited value of a portfolio approach. Besides, it tries to address the difficult question if the mentioned skewness—at the aggregate level—could have any macroeconomic implication (at the level of a whole economy, *might the real business cycles [. . .] be attributable in part to randomness in draws from a skew-distributed universe of innovative opportunities?*). Maybe, but the answer cannot be univocal, and the authors—cautiously—suggest that the hypothesis is a good subject for future research.

Also a good question is the title of the last essay, the fifth: *Will Industry Fund the Science and Technology Base for the Twenty-First Century?* Well—as emphasized in the chapter that comes before the essay—this seems to be a matter of barriers to be overcome, and the government has a crucial role in boosting technology based innovations, by removing the institutional obstacles and by encouraging innovation. Most of the section, thus, is dedicated—apart from a review of the “institutional requirements” to face technical risks and to succeed—to state and federal programs to promote innovation.

The responsibilities of government are also underlined in the conclusions (*The Changing Landscape: Innovators, Firms, and Government*), where the relevant trends driving the U.S. innovation system and the *Institutional Requirements for an Effective System of Innovation* are dealt with. *Indeed, the environments that foster technological innovation—institutions, networks of relationships, culture, and traditions—are as exceptional as successful innovations themselves. [. . .] Helping to create and support such social capital is among the most important and difficult challenges for public policy in the coming century.*

Silent Spill: The Organization of an Industrial Crisis, by Thomas D. Beamish, 2002, Cambridge, MA: The MIT Press

Reviewer: Brian J. Glenn, Harvard University

There is a rich and well-established literature by those who employ issue definition and agenda setting analytical methods to examine environmental disasters. Anthony Downs, for example, described the rise and fall of issue attention cycles as they pertained to ecological disasters, explaining how solutions have to be found and implemented before the news reports move on to the next crisis. Studies of pollution by John Gaventa and problem definition by Barach and Baratz revealed that a problem is

not a problem until somebody thinks it is, while Felstiner, Abel, and Sarat explained that, even then, there is a sequence of naming a problem, claiming, and injury, and blaming the event on an actor before the problem can be litigated. The numerous works of Roger Cobb and his co-authors have also directed attention to the mechanisms that both bring issues onto the public and governmental radar screens, and those that work to keep them off. The lesson one learns from the multiple works listed here and others in their field is that a problem is not a problem until it is defined as one.

Thomas Beamish focuses on a fascinating case that adds to the rich literature briefly described above. Beamish looks at the case of the largest oil spill in America's history, namely the Guadalupe Dunes spill in San Luis Obispo county, California. Over the course of several decades, the Unocal Corporation released between 8.5 and 20 million gallons of oil into the sand dunes on a beach near the company's facility. The Exxon Valdez spill, to put this in perspective, was between 10 and 11 million barrels.

Unlike the other spills which top the list, the Guadalupe spill is remarkable because it was not the result of a single event but rather occurred over decades: decades in which workers at the facility knew oil was seeping into the ground but never spoke out, and decades in which local residents walked the beaches, often smelled or even spotted pools of oil, and yet no one thought of contacting the authorities. The authorities did not discover the spill either, it should be noted, since they relied on a system of self-reporting by the oil companies. (A whistle-blower finally broke the silence.) The largest known oil spill in America's history took place over a long time span when it could have and should have been prevented early on. The mystery of the long period of silence is the focus of *Silent Spill*.

Beamish calls this accident an example of what he *calls* *crescive troubles*, which are ecological events that occur over time. "[T]he idea of *crescive troubles* also conveys the human tendency to avoid dealing with problems as they accumulate. We often overlook slow-onset, long-term problems until they manifest as acute traumas and/or accidents" (p.4). [In-text citations are omitted from all quotations in this review.] Beamish traces, "the *career of knowledge* of the spill through its social contexts: the oil field (the origin of the spill), the regulatory institutions, and the local community. In each location, the search is for answers to the pattern of nonresponse" (p. 7). I found this method of inquiry to be extremely useful in exploring this frequent form of ecological damage by industry.

"The reality that surrounds *crescive* circumstances is characterized by polluters who are unlikely to report the pollution they cause, authorities who are unlikely to recognize that there is a problem to be remedied, uninterested media, and researchers who take interest only if (or when) an event holds dramatic consequences" (p. 13). How did the employees of Unocal allow this to happen? First, over time the organizational routines engendered assumptions about how work was done. Second, routines defined whose role it was to report problems, and those whose role it was knew their careers depended on keeping their mouths shut. Finally, the company's headquarters insulated themselves by relying on the reports of the career employees instead of actively inspecting to ensure compliance.

Regulatory agencies not only relied on companies for reporting, but, more importantly for Beamish, were not organized to deal with a spill of this nature. It was not based in the ocean in a manner that allowed the Coast Guard to take sole control; for example, forcing them to interact with other agencies that not only had different agendas, but were also forced to define the event differently in order for them to become involved. Because the agencies could not agree on the definition of the problem, what Beamish calls “domain consensus,” their response to the spill was problematic at best.

Finally, there is the local community. Beamish’s explanation here is too complicated to summarize effectively, but in short, what is most important is that the community was only able to make sense of what was happening by contextualizing the event in terms of other events. In other words, even though this was a spill like no other, it had to be put in terms that allowed the local press and residents to understand what it meant to them environmentally, economically, and socially.

I would have appreciated a comparison to another crevice event just to see if the framework Beamish develops actually works elsewhere. The conclusions are largely derived from the case, and we cannot be reasonably certain that they hold up across cases. Still, I appreciate that the first work on a question should present a thorough study, allowing for others to take it in new directions.

Thomas D. Beamish brings to light an important and, alas, frequent form of industrial crisis. In a literature that usually focuses on events with a beginning, a middle, and an end, this is a refreshing and very useful addition, since it applies to many real-world cases.

Weather Risk Management, Erik Banks, editor, 2002, Palgrave, Houndmills, Basingstoke, Hampshire, and New York: Element Re Capital Products, Inc

Reviewer: Joseph J. Launie, Ph.D., CPCU, Professor Emeritus, California State University, Northridge

“Everyone talks about the weather, but no one does anything about it.” That old saw has been around for a long time. It suffers from the disadvantage of being false. As an inland marine underwriter over 40 years ago, I underwrote rain insurance policies on air races and sports car shows. My department wrote rain insurance on western movies, an insufficiency of water policy for the Shasta Dam and some ill-fated contracts insuring drying raisins against rainfall. Weather insurance in this country and the world market as a whole has been around for a long time. With its emphasis on derivatives, this book seems to view the area of weather risk management as a recent development. There is no question that the advent of derivatives has changed the weather risk financing field in a dramatic fashion.

In fact, the title of this book is misleading since it covers what risk management professionals will recognize as risk financing rather than the larger topic of risk management. The book lacks any treatment of the risk management decision process starting with risk identification and measurement, including loss control and evaluation of alternatives and cuts right to the financing decision.

This orientation can be seen on page three when they state “We use the term ‘weather risk’ to describe the financial exposure that a business may have to weather events

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