

## **A Short History of Risk Management: 1900 to 2002**

As a child, I was fascinated by the puzzle with a page full of numbered dots which, when connected, revealed a picture. It was a minor miracle! I have created a picture of the risk management discipline by describing and connecting some of its milestones from 1900 onwards. It is a personal list: I'm sure that others could add other important dates and events, but I hope that linking them will give us a better understanding of the discipline.

The Twentieth Century started with a euphoria of new wealth, relative peace, and industrialization, only to descend into a chaos of regional and worldwide wars. These and other catastrophes crushed illusions about the perfectibility of society and our species, leaving us less idealistic and more appreciative of the continuing uncertainty of our future.

Ideas drove change in this past century. Stephen Lagerfeld summed it up cogently in his "Editor's Comment" in the Autumn 1999 issue of *Wilson Quarterly*: "Apart from the almost accidental tragedy of World War I, the great clashings of our bloody century have not been provoked by the hunger for land, or riches, or other traditional sources of national desire, but by *ideas* — about the value of individual dignity and freedom, about the proper organization of society, and ultimately about the possibility of human perfection."

Risk management is one of those ideas, the sense that a logical, consistent and disciplined approach to the future's uncertainties will allow us to live with them prudently and productively, avoiding unnecessary waste of resources. It goes beyond faith and luck, the twin pillars of managing the future before we began learning how to measure probability. As Peter Bernstein wrote, "If everything is a matter of luck, risk management is a meaningless exercise. Invoking luck obscures truth, because it separates an event from its cause."

If risk management is an extension of human nature, I could arguably list as critical most of the notable political, economic, military, scientific and technological events of the past 100+ years. The major wars, from the Russo-Japanese, World Wars I and II, and Korea, to the regional conflicts that have followed, the advent of the automobile, radio, television and the computer, the Great Depression, global warming, the atom bomb and nuclear power, the rise and fall of communism, derivatives fiascoes, the lunacy of terrorism, and the entire environmental movement have affected the development of risk management. Major catastrophes did so more directly: the Titanic, the Triangle Shirtwaist fire, Minimata Bay, Seveso, Bhopal, Chernobyl, Three Mile Island, Challenger, Piper Alpha, Exxon

Valdez, and, most lately, September 11, 2001 and Enron, to cite some of the more obvious. Earthquakes, typhoons, cyclones and hurricanes continued to devastate populous regions, and their increasing frequency and severity have stimulated new studies on causes, effects, and prediction, all part of the evolution of risk management.

Yet the most significant milestones, at least in my opinion, are more personal: the new ideas, books, and actions of individuals that have stimulated the discipline. Here's my list:

**1900** The great Galveston, Texas, hurricane and flood kills more than 5,000 people and destroys a city in less than 12 hours, materially changing the nature and scope of weather prediction in North America and the world.

**1905-1912** Workers' compensation laws are first introduced in the United States, based on their inception in Germany in 1881 by Chancellor Otto von Bismarck. These "social insurance" schemes proliferated worldwide, leading also to government provision of pensions in most countries in the 1930s and afterwards. They signaled a shift from individual responsibility to corporate and governmental.

**1920** British Petroleum forms Tanker Insurance Company, Ltd., one of the first captive insurance companies, beginning a movement that exploded in the 1970s and 1980s. Today there are almost 5,000 such companies worldwide, counting about \$50 billion in annual premiums, \$101 billion in capital and surplus, and \$214 billion in investable assets. Captives illustrate the idea of prudent internal financing of risk, as compared to trying to shift it outside the organization.

**1921** Frank Knight publishes *Risk, Uncertainty and Profit*, a book that becomes the keystone in the risk management library. Knight separates uncertainty, which is not measurable, from risk, which is. He celebrates the prevalence of "surprise" and he cautions against over-reliance on extrapolating past frequencies into the future.

**1921** *A Treatise on Probability*, by John Maynard Keynes, appears. He too scorns dependence on the "Law of Great Numbers," emphasizing the importance of relative perception and judgment when determining probabilities.

**1926** John von Neumann presents his first paper on a theory of games and strategy at the University of Göttingen, suggesting that the goal of not losing is superior to that of

winning. Later, in 1953, he and Oskar Morgenstern publish *The Theory of Games and Economic Behavior*.

**1933** The U.S. Congress passes the Glass-Steagall Act, prohibiting common ownership of banks, investment banks and insurance companies. This Act, finally revoked in late 1999, arguably acted as a brake on the development of financial institutions and led the risk management discipline in many ways to be more fragmented than integrated. The unnecessary split between financial and insurance risks continues to this day.

**1945** The U. S. Congress passes the McCarran-Ferguson Act, delegating the regulation of insurance to the various states, rather than to the Federal government, even as business was becoming more national and international. This was another needless brake on risk management, as it hamstrung the ability of the insurance industry to become more responsive to the broader risks of its commercial customers.

**1952** The *Journal of Finance* publishes “Portfolio Selection,” by Dr. Harry Markowitz, who later wins the Nobel Prize in 1990. It explores aspects of return and variance in an investment portfolio, leading to many of the sophisticated measures of financial risk in use today..

**1956** The *Harvard Business Review* publishes “Risk Management: A New Phase of Cost Control,” by Russell Gallagher, then the insurance manager of Philco Corporation in Philadelphia. This city is the focal point for new “risk management” thinking, from Dr. Wayne Snider, then of the University of Pennsylvania, who suggested in November 1955 that “the professional insurance manager should be a risk manager,” to Dr. Herbert Denenberg, another Penn professor who began exploring the idea of risk management using some early writings of Henri Fayol.

**1962** In Toronto, Douglas Barlow, the insurance risk manager at Massey Ferguson, develops the idea of “cost-of-risk,” comparing the sum of self-funded losses, insurance premiums, loss control costs, and administrative costs to revenues, assets and equity. This moves insurance risk management thinking away from insurance, but it still fails to cover all forms of financial and political risk.

That same year Rachel Carson’s *The Silent Spring* challenges the public to consider seriously the degradation to our air, water and ground from both inadvertent and deliberate

pollution. Her work leads directly to the creation of the Environmental Protection Agency in the U.S. in 1970, the plethora of environmental regulations, and the global Green movement so active today.

**1965** The Corvair unmasked! Ralph Nader's *Unsafe at Any Speed* appears and gives birth to the entire consumer movement, first in the US and later moving throughout the world, in which the old precept of *caveat emptor* is replaced by *caveat venditor*. The ensuing wave of litigation and regulation leads to stiffer product, occupational safety, and security regulations in most developed nations. Public outrage at corporate misbehavior also leads to the rise of punitive damages in American courts.

**1966** The Insurance Institute of America develops a set of three examinations that lead to the designation "Associate in Risk Management," the first such certification. While still heavily oriented toward corporate insurance management, its texts feature a broader risk management concept and are revised continuously, keeping the ARM curriculum up-to-date.

**1972** Dr. Kenneth Arrow wins the Nobel Memorial Prize in Economic Science, along with Sir John Hicks. Arrow imagines a perfect world in which every uncertainty is "insurable," a world in which the law of Large Numbers works without fail. He then points out that our knowledge is always incomplete — it "comes trailing clouds of vagueness" — and that we are best prepared for risk by accepting its potential as both a stimulant and a penalty .

**1973** In 1971, a group of insurance company executives meet in Paris to create the International Association for the Study of Insurance Economics. Two years later, The Geneva Association, its more familiar name, holds its first Constitutive Assembly and begins linking risk management, insurance and economics. Under its first, and current, Secretary General and Director, Orio Giarini, the Geneva Association provides intellectual stimulus for the developing discipline.

That same year, Myron Scholes and Fischer Black publish their paper on option valuation in the *Journal of Political Economy* and we begin to learn seriously about derivatives.

**1974** Gustav Hamilton, the risk manager for Sweden's Statsforetag, creates a "risk management circle," graphically describing the interaction of all elements of the process, from assessment and control to financing and communication.

**1975** In the U.S., the American Society of Insurance Management changes its name to the Risk & Insurance Management Society (RIMS), acknowledging the shift toward risk management first suggested by Gallagher, Snider and Denenberg in Philadelphia twenty years earlier. By the end of the century, RIMS has 3,500 corporate members, some 7,000+ deputy members and a wide range of educational programs and services aimed primarily at insurance risk managers in North America. It links with sister associations in many other countries around the world through IFRIMA, the International Federation of Risk & Insurance Management Associations.

**1976** With the support of RIMS, *Fortune* magazine publishes a special article entitled "The Risk Management Revolution." It suggests the coordination of formerly unconnected risk management functions within an organization and acceptance by the board of responsibility for preparing an organizational policy and oversight of the function. Twenty years lapse before many of the ideas in this paper gain general acceptance.

**1980** The Society for Risk Analysis forms in Washington to represent public policy, academic and environmental risk management advocates. *Risk Analysis*, its quarterly journal appears the same year. By 1999 SRA has over 2,200 members worldwide and active sub-groups in Europe and Japan. Through its efforts, the terms risk assessment and risk management are familiar in North American and European legislatures.

**1983** William Ruckelshaus delivers his speech on "Science, Risk and Public Policy" to the National Academy of Sciences, launching the risk management idea in public policy. Ruckelshaus had been the first director of the Environmental Protection Agency, from 1970-73, and returned in 1983 to lead EPA into a more principled framework for environmental policy. Risk management reaches the national political agenda.

**1986** The Institute for Risk Management begins in London. Several years later, under the guidance of Dr. Gordon Dickson, it begins an international set of examinations leading to the designation, "Fellow of the Institute of Risk Management," the first continuing education program looking at risk management in all its facets.

That same year the Congress of the U.S. passes a revision to the Risk Retention Act of 1982, substantially broadening its application, in light of an insurance cost and availability crisis. By 1999, some 73 “risk retention groups,” effectively captive insurance companies under a federal mandate, account for close to \$750 million in premiums.

**1987** “Black Monday,” October 19, 1987, hits the U.S. stockmarket. Its shock waves are global, reminding all investors of the inherent risk and volatility in the market.

That same year Dr. Vernon Grose, a physicist, student of systems methodology, and former member of the National Transportation Safety Board, publishes *Managing Risk: Systematic Loss Prevention for Executives*, a book that remains one of the best, and clearest, primers on risk assessment and management.

**1990** The United Nations Secretariat authorizes the start of IDNDR, the International Decade for Natural Disaster Reduction, a ten-year effort to study the nature and effects of natural disasters, particularly on the less-developed areas of the world, and to build a global mitigation effort. IDNDR concludes in 1999. Much of its work is detailed in *Natural Disaster Management*, a 319 page synopsis on the nature of hazards, social and community vulnerability, risk assessment, forecasting, emergency management, prevention, science, communication, politics, financial investment, partnerships, and the challenge for the 21st Century.

**1992** The Cadbury Committee issues its report in the United Kingdom, suggesting that governing boards are responsible for setting risk management policy, assuring that the organization understands all its risks, and accepting oversight for the entire process. Its successor committees (Hempel and Turnbull), and similar work in Canada (Dey), the U.S., South Africa, Germany (KonTraG) and France, establish a new and broader mandate for organizational risk management.

In 1992, British Petroleum turns conventional insurance risk financing topsy-turvy with its decision, based on an academic study by Neil Doherty of the University of Pennsylvania and Clifford Smith of the University of Rochester, to dispense with any commercial insurance on its operations in excess of \$10 million. The BP approach is immediately studied by other large, diversified transnational corporations.

**1993** The title “Chief Risk Officer” is first used by James Lam, at GE Capital, to describe a function to manage “all aspects of risk,” including risk management, back-office operations, and business and financial planning. Today, globally there are more than 150 CROs responsible for multiple risk functions.

**1995** A multi-disciplinary task force of Standards Australia/Standards New Zealand publishes the first *Risk Management Standard*, AS/NZS 4360:1995 (since revised in 1999), bringing together for the first time several of the different sub-disciplines. This standard is followed by similar efforts in both Canada and Japan (1997). While some observers think the effort premature, because of the constantly evolving nature of risk management, most hail it as an important first step toward a common global frame of reference.

That same year Nick Leeson, in Singapore, finds himself disastrously over-extended and manages to topple Barings. This unfortunate event, a combination of greed, hubris, and inexcusable control failures, receives world headlines and becomes the “poster child” for fresh interest in operational risk management.

**1996** The Global Association of Risk Professionals, representing credit, currency, interest rate, and investment risk managers, begins in New York and London. An organization attuned to the new Internet world, it first operates electronically, without official offices or staff. By 2002, it grows to be the world’s largest risk management association, with over 5,000 paid and 17,000 associate members.

In 1996, risk and risk management make the best seller lists in North America and Europe with the publication of Peter Bernstein’s *Against the Gods: The Remarkable Story of Risk*. Now in paperback and translated into eleven different languages, this single book, more than any of the preceding papers, speeches, books, ideas, or governmental acts, popularizes our understanding of risk and the attempts to manage it.

**2000** The widely-heralded Y2K bug fails to materialize, in large measure because of billions spent to update software systems. It is a noted success for risk management.

**2001** The terrorism of September 11 and the collapse of Enron remind the world that nothing is too big for collapse. These catastrophes reinvigorate risk management.

Peter Bernstein's book is the fitting end to this list of continuing risk management milestones, since it illustrates the importance of communication. Too often, new ideas have been unnecessarily restricted to the cognoscenti. Arcane mathematics, academic prose and the secretiveness of various risk management "guilds", anxious to keep intruders out, leave many of us out of the process of contributing to this new discipline. Bernstein's lucid prose, compelling syntheses of difficult concepts, and personal portraits of those with new ideas, bring an appreciation of the benefits that risk management can bestow on both organizations and individuals. Communication of what we learn about risk, both positive and negative, is the next hurdle.

And yet none of this looking backward will have any meaning or value unless it also acts as a stimulant for looking forward more prudently, intelligently, and optimistically, using the ideas and tools that the past century has given us. It's time to step out and create some new risk milestones.

I would like to thank Katherine Horgan, of Liberty Mutual, for suggesting the milestone idea, George Head, of the Insurance Institute of America, and James Lam, of eRisk, for their thoughts about the past, and especially Peter Bernstein for his continuing rich insights into our unusual discipline.

Paradoxically, the very mortality that bears each of us along to a finite conclusion also gives us, through its unfolding, the means to repossess what we believe we have lost. It is in memory, given its true shape through the imagination, that we can truly possess our lives, if we will only strive to regain them.

**Louis D. Rubin, Jr., *Small Craft Advisory*, Atlantic Monthly Press, New York, 1991**

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