



The Safety Calculus After BP

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Most reactions to the BP oil spill in the Gulf of Mexico have (rightly) focused on disaster response and the devastating environmental and broader economic impacts. But what are the future decision-making, cost, and investment implications for firms in terms of safety, preparation, and prevention?

How much companies should spend on preventing health, safety, and environmental (EHS) accidents has always been a tough recurring issue for corporations. As we now know all too well, this issue has enormous implications when such accidents could have potentially catastrophic consequences.

The problem for CEOs: what are the appropriate levels of preventive cost, and how closely should they seek zero tolerance? The problem for EHS experts inside the company: how can they calculate the after-the-fact cost of an unlikely accident that hasn't occurred? And how can they show business leaders the range of potential human, ecological, institutional and economic consequences if not enough is spent on prevention?

This corporate cost calculus, at least for low-probability, high-consequence catastrophic events (such as plant or off-shore drilling rig explosions) is likely to be changed dramatically after the BP disaster, especially with respect to a public resource which BP was licensed to use carefully.

If corporations had any doubts about incurring all preventive costs necessary to avoid the adverse catastrophic event, the BP disaster will (and should) change corporate thinking for the foreseeable future, even based on the incomplete facts as we know them today.

These preventive costs, of course, include robust adherence to the spirit and the letter of applicable law and regulation. But, for business leaders concerned about reducing the probabilities of the high-consequence catastrophe to as close to zero as possible, such costs entail many additional elements summarized in the phrases "robust safety culture" and "robust safety management."

It means, for example, detailed education and training. It means careful process mapping; careful assessment of risk-critical points of design, structure, and process;

careful creation of risk mitigation systems and processes (with significant redundancy and fail-safe mechanisms); and careful monitoring of operational discipline and effectiveness. It means, most profoundly, creating a safety culture where the most stringent safety management will never be compromised for economic reasons.

Business leaders must also have a deep appreciation of the potential after-the-fact costs to the company that can occur if prevention is inadequate. Most directly and importantly, there is the damage to human life, to wildlife, and to the environment. But these costs can then translate into an ever-expanding set of consequences: the compensatory (and possibly punitive) damages in private law suits; the payment, under a variety of civil and environmental statutes, to the government for past and future damage and for fines; the payment of penalties under criminal laws; the enormous amount of time and effort expended by management in responding to the disaster; the possible discipline or firing of responsible employees, up to and including the CEO; the general loss of reputation; and the weakening of the company's overall economic health.

In addition, such costs can include damage to stakeholders as the market cap tanks, employees are laid off, supplier relations are shredded (in part through apportionment litigation), and customers become disenchanted. And such events invariably lead to a worsening of relations with key regulators (new permits) and to a new round of regulatory limitations on business activities (some of which may be necessary, some of which, in the heat of the moment, may be ill-conceived).

Many, if not all, of these after-the-fact costs will impact BP as a result of what is now being called the largest oil spill in U.S. history. In terms of direct economic costs (stopping the oil flow, cleaning up the environment, and paying claims and liabilities), analysts are currently estimating BP pay-outs of up to \$18-20 billion. And, of course, this number could continue to grow as long as BP is unable to stop the spill. In addition, BP has lost about one-third of its market cap since the explosion (more than \$60 billion) because of uncertainty about the ultimate economic impact of the spill on the company.

Beyond the to-be-determined date when the oil stops flowing, another major wild card will be the future assessment, through various inquiries, of what caused the explosion at the Deepwater Horizon well and who was at fault. There have been fragmentary news accounts — hardly conclusive at the moment — of possible BP violations of its safety rules, and of cost and economic pressures to move forward in the face of warning signs. If there were negligent acts leading up to the explosion or even possibly intentional acts in violation of either company policy or of law and regulation, then additional costs will occur, ranging from discipline of BP employees at many levels to bitter litigation with other commercial vendors at the rig, to even more severe governmental sanctions.

Related to the question of "fault" is the fundamental issue of whether the Macondo incident was the result of failure to handle properly well-understood technology, or was instead the result of technology that had not been fully tested, evaluated and safeguarded.

Indeed, for CEOs and for regulators, the most profound question raised by the BP catastrophe may be how to combine innovation in oil exploration in difficult environments with a more stringent technology evaluation. Should the government mandate a more rigorous oil exploration safety calculus for new technology? Should such a calculus seek a much higher degree of probability that no catastrophic accidents will occur, given the size and impact of the BP event on public resources?

Certification of nuclear power plants or new air frames and aircraft engines seek that kind of safety calculus. And beyond oil and gas exploration, especially in deep water, the question may be asked what other kinds of technological innovation truly pose the kinds of catastrophic risk which require a higher, more rigorous level of risk assessment.

After the Macondo well explosion, CEOs and boards in companies all across the globe will be asking that question about their low-risk, high-consequence technologies — along with legislators and regulators, not just in Washington but in many global capitals.

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