

Introduction to *The Effect of Disasters on Business*

Natural disasters, wars, and, more recently, terrorist acts such as 9/11 have had a significant impact on all phases of society. Beyond the personal tragedy and loss of property, disasters affect infrastructure, culture, the economy, and business, which is the engine that drives the economy. This supplement focuses on the effect that recent disasters have had on business and what companies can do to minimize their impact through proper planning.

Long before the Titanic sank in icy Atlantic waters in 1912, one person was heard to say “God himself could not sink this ship.” Obviously, if the ship could not sink, there would be no need to have enough lifeboats for all on board, to conduct drills, to pay attention to iceberg warnings, or to even send a distress signal. Failure to acknowledge risk and uncertainty is not new and sometimes not even uncommon.

More recently, the decimation of New Orleans by Hurricane Katrina was not impossible to predict. In fact, according to the Army Corps of Engineers, the probability of this occurring over a normal person’s lifespan of 77 years was 3 in 1. Unfortunately, Katrina will not be the last disaster. A month after Katrina and Rita hit the American gulf coast, Pakistan suffered a major earthquake, which took an estimated 79,000 lives as of October 2005. Unfortunately, the U.N. Office of Emergency Relief has predicted that the total could rise to between 100,000 and 120,000.¹ The human and economic costs of disasters are horrendous, but they can be reduced with the proper planning.

Planning for Trouble

Most major corporations develop contingency plans along with their standard plans. A contingency plan is one that outlines alternative courses of action that may be taken if the organization’s other plans are disrupted or become ineffective for whatever reason. Importantly, such plans provide procedures and technical measures to enable the recovery of systems, operations, and data after a disruption. Ideally, it is based on the risks faced not only by the organization itself but those faced by business partners, suppliers, and customers. The objectives of contingency planning include: (1) restoring operations at an alternate site with alternate equipment and (2) performing some or all of the interrupted operations using some other means.² First, business continuity must be ensured, and then disaster recovery can follow.

The Importance of a Disaster Management Continuity Plan

When Flight 77 slammed into the Pentagon on September 11, 2001, the 37 employees at Children’s World Learning Center, the Pentagon’s day-care facility, knew exactly what to do. They calmly led the children out of the building, situated near the Pentagon, to a safe location. It turns out that these day-care employees were just following the evacuation drill they practice once a month. Even though

confusion was all around them, they remained “pretty calm, as far as what to do,” says Shirley Allen, the day-care center’s director. “It helped a lot in a real emergency.”

As Allen knows, a little planning can save lives. It can also save businesses. Current estimates suggest that two out of five companies that are hit by a disaster go out of business within five years. It is estimated that 85 percent of large businesses have a disaster management plan. Unfortunately, the equivalent figure for small companies is 25 to 35 percent.³

Planning for Disaster

The first step in contingency planning is to recognize the existence of risk and uncertainty. A starting point is to look at those disasters that have occurred in the past.

While all the total costs have yet to be assessed, Hurricane Katrina appears to be the costliest natural disaster the world has seen in recent history. Early estimates run in excess of \$200 billion. Other than Katrina, there have been other costly natural disasters within the past 20 years, as listed below.

Beyond natural disasters, wars and terrorist attacks have been enormously destructive and costly to society. The September 11, 2001, attacks on the World Trade Center and the Pentagon inflicted casualties and material damages on a far greater scale than any other aggressive acts in recent history. Lower Manhattan lost approximately 30 percent of its office space, and a number of businesses ceased to exist. Close to 200,000 jobs were destroyed or relocated out of New York City, at least for the foreseeable future. The destruction of physical assets was estimated at \$14 billion for private businesses, \$1.5 billion for state and local government enterprises, and \$0.7 billion for federal enterprises. Rescue, cleanup, and related costs have been estimated to amount to at least \$11 billion, for a total direct cost of \$27.2 billion.⁵

Focusing on the United States and what the future holds, 150 million people and trillions of dollars worth of buildings and other property are in coastal counties prone to hurricanes. Katrina, Rita, and Wilma did billions of dollars of damage, and hurricanes are just the start. Tornadoes can occur anywhere in the world, from Spain to Wales and from Japan to the USA, but they mostly occur in the United States.

Top 10 Worldwide Natural Disasters⁴

Rank	Year	Event	Region/Country	Economic Cost U.S. \$ Billions
1	2005	Hurricane Katrina	Gulf Coast USA	\$200
2	1995	Earthquake	(Kobe) Japan	100
3	1994	Earthquake	(Northridge) USA	44
4	1992	Hurricane Andrew	USA	43
5	1998	Floods	China	31
6	1996	Floods	China	24
7	1993	Flood	(Mississippi) USA	21
8	1999	Winter storms	Europe	19
9	1990	Winter storms	Europe	15
10	1995	Floods	North Korea	15

Tornado Alley and Earthquakes in the U.S.

While tornadoes have hit every state in the union, there is a corridor called Tornado Alley stretching from West Texas to North Dakota, including large pieces of Texas, Kansas, and Nebraska. Due to ideal meteorological circumstances, this area is hit by more tornadoes than any other land mass in the United States. Texas alone experiences more than 100 tornadoes each year.

Then there are the faults—fractures in the earth's crust that can lead to earthquakes. According to David Applegate, the U.S. Department of Interior Senior Science Advisor, earthquakes are the most costly, single-event natural hazard faced by the United States.

A great deal of critical infrastructure is located in seismically active areas of the nation, including homes, schools, hospitals, and other important structures that make up the “built-up” environment. These active areas are populated by 150 million people in 39 states. The most well-known fault is San Andreas, the geological fault that spans roughly 800 miles and is famous for producing large and devastating earthquakes.

The Interior Department's U.S. Geological Survey (USGS) estimates a 62 percent chance of an earthquake of magnitude 6.7 or greater on the Richter scale occurring in the San Francisco region before 2031. The USGS earthquake hazards program devotes approximately 75 percent of its resources to the western United States, primarily because the hazard there is greater. However, history demonstrates that a catastrophic quake could also strike a major city in the eastern United States. Four damaging earthquakes with magnitudes greater than 7 occurred in Missouri, in the Mississippi Valley, in 1811–1812. Charleston, South Carolina, was devastated by a magnitude 6.7 shock in 1886, and a magnitude 6.0 quake struck the Boston area in 1755.

USGS and FEMA studies show that urban areas in the eastern United States would incur far greater damage and far more deaths than a quake of similar magnitude in the west. This is because (1) differences in regional geology produce shaking effects in a much larger area for the same magnitude earthquake, (2) most structures in the east are not designed to resist earthquakes, and (3) population density is high and residents are not routinely educated about seismic safety.⁶



Disease

Disease can also cause economic turmoil. The collapse of export markets following the discovery of a single cow infected with mad cow disease cost Canadian producers about \$600 million in 2003 and probably had an overall economic negative impact of \$2 billion.⁷

According to health researchers and economists, a worldwide pandemic of bird flu could shut down travel, disrupt supply chains, overwhelm health care systems, and devastate economies, globally. So far, the avian flu does not appear to be transmitted from one human to another. All cases linked to the strain, which has killed 65 people in Asia, have been transmitted from infected birds to humans. However, given the migrations and mobility of birds and the inability of man to control their movements, the consequences of such a disease could be severe.

Dollar estimates of the economic impact of this type of disaster are difficult to quantify but could run in the tens of billions of dollars. An economist at the Center for Disease Control and Prevention estimated in a 1999 article that a pandemic flu could

cost the United States alone \$71 to \$165 billion. “Those economists that have looked at this have likened it to a catastrophic depression,” says Michael Osterholm, director of the Center for Infectious Disease Research and Policy at the University of Minnesota. Travel bans, sick workers, and panic could quickly shut down international trade. Industries hardest hit could include airlines, travel-related services, insurance firms, and health care. Soaring death rates could end the housing boom and create a vast oversupply. According to Osterholm, “Depending on its length and severity, its economic impact could be comparable to the Great Depression of the 1930s.”⁸

International

Internationally, 3.4 billion of the world’s population lives in areas where some form of natural disaster can occur, be it drought, floods, cyclones, earthquakes, volcanoes, or landslides. In a global economy, a disaster in one country can impact many other countries. For example, Taiwan, according to several studies, may be the most vulnerable place on Earth to a natural catastrophe, with 73 percent of its land and people exposed to three or more hazards. Taiwan is a major U.S. trading partner. In the event of a major disaster, the effect on the computer and electronics industry in the United States would be substantial. Too, there are the costs of providing assistance and humanitarian aid. For example, from 1980 to 2003, the World Bank provided US\$ 14.4 billion in emergency lending to 20 nations, including India, Bangladesh, Mexico, Brazil, Honduras, and China.⁹

How Should Business Deal with Disasters?

Disasters, natural or man-made, are a fact of life that human beings, society, government, and business have had to deal with throughout history. Unfortunately, disasters won’t go away, and man cannot eliminate them. What we can do is prepare for their occurrence and develop plans on how best to deal with them. The success of our ability to deal with disasters is dependent on our ability to plan in advance, the quality of our response to the disaster, and our ability to learn from the situation and apply that learning to preparations for the next disaster. A starting point is contingency planning. There are many approaches to contingency planning. The following is a useful outline in how to develop a contingency plan.

Steps in Contingency Planning

1. *Identify critical functions and resources.* Identify those functions critical to keeping the business running. This would include (1) human resources, such as key personnel, (2) material resources, such as products to sell and ways to get them to consumers, (3) financial resources, such as money to meet payroll, and (4) informational resources, to enable communications and record keeping.
2. *Identify possible emergencies, even the improbable ones.* Often those events that do the most damage are those no one imagined. For example, the possibility of passenger jets crashing into a building such as the World Trade Center had been thought of. What wasn’t imagined was that large planes with nearly full fuel tanks crashing at high impact could jar the fireproofing from the supporting girders and thus bring the towers crashing down.
3. *Do the numbers: Assign a probability to each event.* Some companies use 80, 50, or 20 percent. For example, based on an analysis of hurricane patterns, ExxonMobil

might estimate that there is a 20 percent probability that a Category 5 hurricane would hit their oil platforms in the Gulf of Mexico over the next five years. Others try to be more specific. FEMA, for example, suggests using a 1 to 5 ranking where 5 is the emergency most likely to occur and 1 the least likely. While the accuracy of a specific number can be argued, the exercise of estimating the likelihood of an event happening is an important starting point in developing plans to deal with the effect of a disaster.

4. *Assess the potential impact of each emergency on critical functions.* Again, a 1 to 5 ranking could work where 5 is crippling and 1 is no impact at all. Terms such as high, medium, and low would also work. See Exhibit 1 for an example.
5. *Develop alternate plans to deal with an anticipated emergency.*

The scope of preplanning and preparation for disasters can be as wide and diverse as the world of business itself. In an effort to provide useful context, this supplement approaches contingency planning from the structure discussed in the text, *Business*, by Pride, Hughes, and Kapoor. The impact of disasters on the following business areas will be addressed.

- The Environment of Business
- Small Business and e-Business
- Leadership and Human Resource Management

1. Critical Functions and Resources:				Exhibit 1
Material	Human	Financial	Informational	Hypothetical Example: ACME, a small 50-person envelope manufacturing company in Buffalo, New York.
Building	Managers	Income from Sales	Telephones	
Machinery	Workers	Payroll	Computers	
Paper, Glue	Suppliers	Cost of Goods	Cell Phones	
Energy	Maintenance	Time Clocks	Test Equipment	
2. Emergency Assessment:				
Possible Emergency		Probability	Impact	
1. Earthquake		5%	High	
2. Ice storm		60%	Medium	
3. Terrorist attack		10%	High	
4. Flu pandemic		5%	High	
5. Power failure		70%	Medium/High	
Based on the above, ACME should begin developing plans to respond to power failures and ice storms. This might involve strategies such as:				
1. Purchasing back-up generators.				
2. Establishing an out-of-town alternative site search in case access to buildings is prevented and/or power outage is long term.				
3. Arranging for interim workers for alternative site.				
4. Setting up a line of credit to pay for production and payroll while sales income is interrupted.				

The Environment of Business

Business is defined as the organized effort of individuals to produce and sell, for a profit, products and services that satisfy society's needs. For a business to exist, it must combine four kinds of resources:

1. *Material Resources:* Raw materials used in manufacturing processes as well as buildings and machinery.
2. *Human Resources:* Workers who furnish labor in return for wages.
3. *Financial Resources:* Money required to pay employees, purchase materials, and fund operating costs.
4. *Informational Resources:* Data that tells managers how effectively the other resources are being used.

Major disasters such as Hurricanes Katrina, Rita, and Wilma or a terrorist attack such as 9/11 can disrupt the availability of these resources and significantly change the business environment. For example, Hurricane Katrina has had and will continue to have a significant negative impact on each of these resources for businesses both in the United States and abroad.

Material Resources

The Gulf of Mexico produces 30 percent of domestic crude oil, and its ports handle 60 percent of the nation's oil imports. It also produces 20 percent of domestic natural gas.¹ The disruption of operations at these facilities has sent gas prices soaring above \$3.00 per gallon, and it is estimated that electrical and heating costs will run 20–35 percent higher this winter across the nation. This increase in the cost of raw materials will significantly impact airlines, the trucking industry, and manufacturers, who in turn will pass on these costs ultimately to consumers.

Beyond the petrochemical industry, the disruption of shipping on the Mississippi River will have a significant impact on raw materials going to and from the United States. The Port of New Orleans is the world's busiest waterway, with more than 6,000 vessels moving through the port annually. It is the largest port in the United States by tonnage and the fifth-largest in the world. It exports more than 52 million tons a year, of

which more than half are agricultural products. In addition, nearly 17 million tons of cargo come in through the port—including not only crude oil, but chemicals, fertilizers, coal, concrete, and more.² Though Katrina caused widespread damage, the facilities at the Port of New Orleans are repairable. Unfortunately, the storm occurred just prior to the busiest traffic period—the fall harvest, when agricultural products from the Midwest will be shipped down the Mississippi by barge for transfer to ocean-going ships. Certainly, there will be significant delays in the shipment of raw materials through the port.

The specific effect on domestic and foreign business will take time to determine. However, at this point, it is safe to expect that the costs for all sorts of goods made from oil and natural gas byproducts will rise in coming months as petrochemical shortages and high costs left in the wake of the Gulf Coast hurricanes begin filtering throughout the economy.

The diverse list of affected products is almost boundless: polyester shirts, plastic garbage bags, carpets, cleaning supplies, PVC pipe, and parts for automobiles. Then there are the containers: milk jugs, Coke bottles, Styrofoam cups, cheese wrappers, packages for hot dogs, and even those disposable plastic bags most of us carry home from the grocery store.

Finally, there are the indirect effects, such as farmers' higher costs for petroleum-based fertilizer, pesticides, and herbicides that could lead to price increases in the produce aisle. More than 20 percent of North America's plants making important chemicals such as xylene (used in cleaning agents and pesticides) and benzene (used to make rubber, plastic, and dyes), remained out of service, according to Chemical Market Associates, a Houston-based petrochemicals consulting company. Some could remain off-line through the end of the year.

Prices for ethylene, used in plastic film for packaging and a wide variety of other plastics, soared by 118 percent. Prices for propylene and polypropylene, used to make plastic food containers, among other things, jumped by as much as 62 percent. Now, these higher supply costs are beginning to filter down to consumers.

- Kraft Foods said it was exploring additional pricing actions to try to offset soaring costs that included packaging, such as petrochemical-based plastic wraps for its meats and cheeses or containers for coffee and Jell-O.
- Cooper Tire & Rubber Co. said it would raise some prices to help offset rising raw materials costs. It is estimated a tire that cost \$60 a few months ago will cost \$75 to \$80 in a few more months.
- Calhoun-based Mohawk Industries recently said it would boost its carpet prices by 5 to 8 percent because of higher petrochemical and natural gas costs.
- Rohm and Haas Company, which makes everything from home siding to packing tape from petrochemicals, said it plans to quickly implement price increases to offset higher materials and transportation costs. The most widespread price increases for consumers, however, will likely come in everyday goods.
- Dow Chemical and DuPont recently announced they're raising prices on nearly everything they sell, from chemicals used in bathroom cleaners to freezer bags and kitchen countertops, because of high raw materials costs.³

Human Resources

Possibly, the most important resource that was affected by Katrina was the human resource, or more specifically, the workforce. It is estimated that more than 500,000 were left homeless in New Orleans and about 300,000 people are out of work and dispersed throughout the South, mostly in contiguous states.⁴ The oil fields, pipelines, and ports require a skilled workforce in order to operate. Workers require homes.

They rely on stores to buy food and other supplies. They need hospitals, doctors, dentists, schools, and a myriad of other services to sustain a normal life. At present, New Orleans is still being pumped dry. Most areas of the city do not have electricity, drinkable water, or sewage treatment. It is estimated that up to 50,000 homes in the city will have to be demolished. Obviously, it will take considerable time to replace them. No one knows for certain how long it will take to repair the infrastructure, rebuild the homes, provide the services, rehire the workers and restore productivity to normal at the Port of New Orleans and the petrochemical industry in the area. Certainly, the time frame will be calculated in years rather than months.

Financial Resources

Hurricane Katrina and subsequent flooding in the Southeast could cost the economy more than \$200 billion, which would make it the costliest storm ever to hit the United States. The cost in economic activity, which includes losses from interruption and displacement of residents, could set the economy back \$100 million a day. That could climb if businesses decide to relocate or are unable to return in a timely fashion, further depressing the long-term economic prospects of New Orleans and surrounding areas.⁵

Locally, New Orleans and its parishes are locked in a painful dilemma. They are unable to lure back exiled residents without services, and they are unable to provide services without taxes from residents. The primary source of revenue in New Orleans is its sales tax, which before the storm covered about one-third of the city's operating budget. "We've gone from about \$13 million a month in sales tax to zero," said city finance director Reginald Zeno. He ticks off a long list of other lost revenues, from parking and speeding ticket fines to the tax imposed on utilities that the city can't expect to see for some time. "The level of revenue we might see next year is anyone's guess," Zeno said.⁶

The city has already lost 29 of the 70 conventions that had been scheduled in 2006. Its convention center has yet to reopen and will probably not do so until early next year.

New Orleans has lost \$1.5 million in tourist revenues every day since the levees broke, according to the Louisiana Office of Tourism, and less than one-third of its 3,400 restaurants have reopened. Small businesses are struggling to survive because of the lack of residents and tourists, and many large companies have yet to return. Before the hurricane, New Orleans was home to roughly 115,000 small businesses. "Losing half of those businesses is not out of the question," said W. Anthony Patton, a member of the reconstruction commission.⁷

Informational Resources

The effect of disasters on information resources can be a two-edged sword. When telephone lines go down, cellular phones go dead, and Internet communications are lost, it can cause chaos and can contribute to the devastation. However, with proper planning, informational resources can be crucial in saving lives and providing assistance to the stricken. Wal-Mart is a good case in point.

When Hurricane Charlie hit Florida last year, Wal-Mart management was alarmed by the lack of visibility in its affected stores. It was the first time it realized the extent to which the Information Systems Division could lose visibility of the damage at stores and whereabouts of employees in affected areas. It was Wal-Mart's wake-up call to get better prepared to track lost power, network coverage, and cellular phone communications after a disaster strikes.

Before Katrina, Wal-Mart had built what it called an emergency operations center designed to allow employees from different departments to work in close proximity during a disaster. Katrina put it to the test. By having people work in the operations center, it let people from multiple parts of the company make decisions and set priorities on what tasks and systems were most important. “When you go through a crisis similar to Hurricane Katrina, the pharmacy system is as critical as anything else we’ll do,” Wal-Mart’s CIO said. Wal-Mart also utilized a dashboard system developed for the operations center that gives the company the visibility it lacked—showing each store’s damage, whether employees were at risk or injured, if the store has communications platforms running, and whether it was running on landlines or satellite systems, utility or generator power. Employees set up mobile pharmacy facilities to fill prescriptions for people dislocated by the storm, and Wal-Mart needed to connect those to a group of pharmacists at its Bentonville, Arkansas, headquarters to fill prescriptions, because the demand at those mobile sites was so high.

Wal-Mart also set up emergency telephone lines for employees to call in, in order to account for all its employees and connect them to family members. Calls quickly exceeded 2,500 daily, swamping the existing call center and forcing the IT team to build a new one, which was accomplished in a matter of hours. Wal-Mart also launched a Web site where employees and others in the affected area could post messages to friends and family. When it proved popular, the company expanded it for use by nonemployees. There have been 40,000 messages posted and more than 2 million hits to the site.⁸

Ethics and the Business Environment

Ethics, specifically business ethics, also plays an important role in defining the business environment. Ethics is the study of right and wrong and of the morality of the choices individuals make. Business ethics is the application of moral standards to business situations. If companies do not employ business ethics in their dealings with investors, customers, employees, creditors, and competitors, they will eventually fail. Enron, WorldCom, and Tyco are painful examples of this simple truth.

Ethics also helps shape how people respond to disasters like Katrina. Dr. Edward Queen, in a discussion of ethical responses to Hurricane Katrina, made the following observation:

“Incompetence is immorality. This statement has several dimensions. First, to continue in a position that one lacks the competence to fulfill is immoral. For that reason Michael Browne, the discredited director of FEMA, should have resigned . . . but he should have done the honorable thing and fallen on his sword, at least metaphorically, much earlier. Not because he is bad, but because he is a man who, through no fault of his own, had been elevated above his competence. Now, both he and the world know it. He continued in the position of director, knowing that he was unable to meet his obligations; and that was wrong. Please note that I am not referring to mere mistakes, I am talking about the ability to fulfill the overall duties of an office. I am speaking about competence, not perfection.

Second, it is the obligation of systems, their duty, to accomplish the purposes for which they exist, and for those supervising them to ensure that the mechanisms and personnel are there to accomplish those purposes. That is what moral leadership is about: the ability to deliver the goods, as well as the Good. Nothing can be good that does not work; mere good intentions, as the saying has informed us all, pave the road to hell.”⁹

Ethics therefore affects the business environment in the manner and competency with which people respond to a disaster. According to several accounts, companies were far more successful than government in their response to Katrina. Home Depot stores were among the first to reopen in the storm's wake, offering rebuilding supplies, electrical generators, and other essential tools. A day after the storm, all but ten of the company's 33 stores in Katrina's impact zone were open. Within a week, it was down to just four closed stores (of nine total) in metropolitan New Orleans.¹⁰

Wal-Mart began its response six days before the storm hit. The retail giant had studied customer buying patterns in hurricane-prone areas after previous storms. They stocked up on items such as bottled water, flashlights, generators, chain saws, tarps, and mops and shipped them to the disaster areas. In Waveland, Mississippi, a gulf coast town laid to waste by the storm, a Wal-Mart manager salvaged everything she could and handed out food, water, and clothing to people in the parking lot. She even broke into the pharmacy and got insulin and drugs for Aids patients.¹¹

FedEx came up with a plan to fix a FedEx radio antenna on top of a 54-story building in New Orleans so that rescuers could have radio contact with each other. Before the storm hit, FedEx positioned 30,000 bags of ice, 30,000 gallons of water, and 85 home generators outside of Baton Rouge and Tallahassee so that it could move in quickly after the storm to relieve employees. Before Katrina, FedEx staged 60 tons of Red Cross provisions (it has since delivered another 440 tons of relief supplies, mostly at no charge).¹²

These companies were more effective than government because they prepared well, responded quickly, and they did so because Katrina was exactly the kind of event for which well-run corporations prepare themselves. The government didn't come through nearly as well. Local and federal officials failed to adequately prepare for the storm and failed to react quickly after it hit. One might conclude that business did a better job of meeting the ethical challenge.

Globalization and the Business Environment

Less than forty years ago, the geographical environment for American business was defined by North and South America, Europe, Japan, and the Middle East (for large oil companies). At that time, only the largest U.S. companies had the scale to market their goods and services to foreign countries. Today, the business environment is global for all companies regardless of their size. In the United States, international trade now accounts for over one-fourth of gross domestic product (GDP). There are several reasons for the rapid expansion of global business: a relatively peaceful political environment, easing of trade barriers, greater availability of capital, more affordable and rapid transportation options, and efficient global information systems. This has spawned the growth of multinational companies, firms that operate on a worldwide scale without ties to any specific nation or region. Though these companies have demonstrated an ability to adapt to changing business environments, their geographical scope makes them increasingly vulnerable to global disasters natural, terrorist-driven, and man-made.

The catastrophe at the Union Carbide Plant in Bhopal, India, is an example of a man-made disaster. Union Carbide's agricultural pesticide plant released approximately 40 tons of methyl isocyanine (MIC) into the atmosphere on December 3, 1984, resulting in the death of as many as 3,000 and injuries to thousands more.¹³ The resultant law suits cost the company \$470 million in settlement claims and made it economically vulnerable to a takeover. Union Carbide was forced to sell most of its major divisions and was eventually acquired by Dow Chemical Company in 2001.¹⁴ While the Bhopal disaster was the result of poor planning and human error, it reflects the consequences that can befall a company if it does not properly prepare for catastrophic events.

The 1999 Taiwan earthquake was an example of the ripple effect of a natural disaster on business. The earthquake had a significant impact on the worldwide semiconductor industry in that it disrupted the supply of foundry services and increased prices for memories and other products. C-Cube, a manufacturer in Milpitas, California, had 70 to 80 percent of its capacity coming from Taiwan. This manufacturer of chips for products including DVDs and set-top boxes was forced to seek alternative supply sources. Larger companies like Motorola Inc. were able to weather the Taiwan crisis because they had agreements in place with second and third sources. Motorola is a good example of a company that believes in contingency planning.¹⁵

Terrorist attacks pose a different type of problem for business. Recent history has shown that terrorism is global in scope. Beyond the immediate destruction that terrorist bombings create in lives and property, they have long-term implications on the global economy by raising transaction costs, which results in reductions in potential output. These costs can be broken down as follows:

- *Higher operating costs.* Businesses may experience higher operating costs owing to increased spending on security, higher insurance premiums, and longer wait times for activities.
- *Larger levels of inventories.* Business may be required to hold larger inventories than previously, owing in part to less reliable air and rail transportation. There is anecdotal evidence from the auto industry that production was interrupted because components were not immediately available from suppliers after the September 11 attacks, owing to delays in shipments crossing the U.S.-Canada border.
- *Elevated risk premiums.* As a result of the attack, lenders' appetite for risk may decline, leading to elevated risk premiums that may be passed on to businesses in the form of higher interest rates and lower equity prices, with an adverse effect on business investment, and a smaller capital stock.
- *Shift of resources away from the civilian labor force toward the military.* More resources may be diverted toward the military for use in the containment of terrorism. In addition, research and development (R&D) resources may be shifted away from productive activities and towards the development of new devices to thwart terrorism (although such devices may have beneficial spillover effects elsewhere).
- *Shift away from globalization.* The attack may have effects on firms' investment decisions—in particular, whether to invest domestically or abroad, in part because of potential disruption of cross-border flows of goods and assets. Costs for such transactions may rise owing to closer inspection of transactions and higher insurance premiums.¹⁶

EXERCISES

I. Contingency Planning Team

The core mission of your college or university is to help students learn and achieve their educational goals. In order to do this, the school has to perform a number of critical functions such as conducting classes, processing grades, collecting tuitions, paying teachers, providing information as to class schedules, and so forth. In order to do this, the school must utilize material resources such as buildings and electricity, human resources such as professors, financial resources to help make payrolls, and informational resources such as email accounts.

Your team has been hired to develop a contingency plan for the school in the event a natural disaster might disrupt operations. As a first step, you need to identify the critical business functions required to keep the school running. List any functions and resources you can think of in addition to the ones listed.

Step 1

School functions and resources:

Material: examples—buildings, heat, light, other? _____

Human: examples—professors, administrators, other? _____

Financial: example—payroll, other? _____

Informational: examples—computer networks, grade processing, registration, other?

Step 2

Develop a list of all the possible emergencies and disasters that might impact the school. Be as detailed as possible in developing your list. Use your imagination; do not be limited by degree of likelihood at this time.

	Possible Emergencies/Disasters	Probability	Impact
1.	_____		
2.	_____		
3.	_____		
4.	_____		
5.	_____		

Step 3

Go back and assign a probability of the likelihood of occurrence to each event. This probability will be a number between 0% and 100%.

Step 4

Indicate whether these events will have a high, medium, or low level of impact on critical functions and resources.

Step 5

Develop a list of potential problems your highest probability event might cause on campus. For example, if the power went out in an ice storm, the campus buildings couldn't be used, elevators would not work for the disabled, computer networks would be down, and so forth. Icy roads would keep key personnel from getting to the school. What other problems might you anticipate?

Step 6

Choose one of the major problems you have identified in step 5, and develop a contingency plan. For example, you might decide that getting key personnel to the school to start work on reopening the campus is the most important task. You might wish to suggest that the administration develop a list of such personnel, appoint someone to oversee the process, etc.

2. Pizza Opportunity

You are the owner of a small pizza parlor close to a national university in Tornado Alley. In the past, power outages and damage resulting from tornadoes has left your business closed for up to a week at a time. This has cost you money, especially because demand for pizza and other prepared food tends to be high in such emergencies.

You believe that if you can develop plans to somehow cook and deliver pizzas after a tornado, when others cannot, it will be very beneficial not only in terms of immediate sales but in long-term goodwill. You sit down with your manager and begin brainstorming ideas. One idea is to purchase portable grills, possibly hibachis and Webbers, along with charcoal. At least you could cook something. You also plan to add an emergency cell phone number to your menu so that if the phones go out, your customers could still reach you.

What other ideas might you suggest?

3. Research Assignment

Due to the flooding after Katrina, Tulane University could not physically open its doors to its students. Clearly, its material resources (buildings, infrastructure, and so forth) were not available to its students. How did Tulane respond to the problems faced by its students? What alternative plans were made available to the students? What resources did they bring to bear?

How Disasters Affect Small Business and e-Business

As discussed in the text, small businesses are a unique segment of the private sector. They represent about 99 percent of all employers, employ almost 50 percent of the private workforce, and provide roughly two-thirds of the net new jobs added to our economy.¹

Small businesses are also unique in the fact that disasters have a disproportional impact on them. This is due to many factors. A natural disaster such as a hurricane can completely alter a business district and local shopping patterns. People in the area of the disaster may move away and not return, thereby severely reducing the customer base. If a small business site is inaccessible, the owner usually does not have an additional location to act as a backup site for doing business. When damage is severe, most small business owners do not have the resources to rebuild their businesses. For example, many small businesses in New Orleans wish to return but have found that not only are their customers gone but so, too, are their workers. Even if a company can find its workers, it may not be able to afford them. One small firm affected by the hurricane used to pay an unskilled, common laborer \$7 an hour. Today, the same firm cannot hire the same person for even \$15 an hour.²

According to a recent NFIB National Small Business Poll, man-made disasters affect 10 percent of small businesses, whereas natural disasters have impacted more than 30 percent of all small businesses in the United States. Hurricanes are by far the most destructive force, causing power failure, flooding, customer loss, and the closure of many businesses.

When a major disaster strikes a community, it often will forever change the trading area, leaving many small business owners with few choices but to walk away from the business. The U.S. Department of Labor estimates that over 40 percent of businesses never reopen following a disaster. Of the remaining companies, at least 25 percent will close within two years.³

For these reasons, the biggest option for the small business owner is oftentimes survival recovery as opposed to contingency planning. However, there are actions that small business owners can take in anticipation of a disaster to reduce its impact on their business. The following are actions that small business owners should consider in anticipation of and recovery from a disaster.

- *Preplan what can be preplanned.* Maintaining important business information is critical. Records such as customer lists, vendor records, accounts receivables,

accounts payables, etc., should be backed up, preferably in an offsite database. (This will be discussed further in the next section.)

- Having a backup site to conduct business in the event your present site is not accessible can be crucial. The ability of a company to use an alternate facility is of course dependent on the nature of its business. For example, a backup location might work well for an assembly plant but may not be feasible for a manufacturing operation that requires bulky and sophisticated machinery. As well, a retail store may not be able to find a location with suitable consumer traffic.
- Help can sometimes come from unexpected sources. When the south tower collapsed in the attacks on the World Trade Center, New York City architectural firm Gruzen Samton saw their offices across the street destroyed. Not only were millions of dollars lost due to burned and broken furnishings and equipment, but so were paper records and computer data, as well as the photographic history of the company's projects. But Gruzen Samton was able to get back up and running thanks to competitors who provided office space. In the face of national tragedy, old rivalries were forgotten.⁴
- Power, heat (or air conditioning), and an alternate water source are critical for most enterprises. Backup generators, heating/cooling options, and water tanks should be investigated. An important preplanning item would be to determine the cost of business interruption insurance. Obviously, the level of contingency planning is dependent on the nature of one's business, one's assessment of the likelihood of a disaster, and the ability and willingness to invest resources in anticipation of a catastrophe.
- *Assess the damage.* After the disaster occurs, companies need to determine the level of damage to their operations. The damage should be quantified and rebuilding/replacement costs estimated utilizing realistic, up-to-date market costs. Obviously, disaster recovery will be more challenging for small businesses with large inventory losses. The timing needed to rebuild, replace, restock, and make the business productive must be carefully estimated, since this will determine financial needs at various points in time.
- *Ensure market viability.* After a disaster, the market will take time to reestablish itself. International, national, and regional businesses will have a much easier time rebuilding following a major disaster than will local businesses. Businesses that rely on heavy foot traffic will have greater challenges in rebuilding. An assessment needs to be done to determine if the firm's previous market segment still has the potential to sustain the business. If not, the business needs to determine whether it can reach out to new markets unaffected by the disaster.

Sometimes the market is still viable, but in order to serve it, the product must change. Kristin Rhyne was nowhere near the twin towers when terrorists crashed airliners into them on September 11. But the 31-year-old Harvard Business School graduate and founder of Boston's Polished Inc. suffered business damage almost as great as those in lower Manhattan. Rhyne owns a chain of airport beauty spas, which among other products sells manicure kits. Because of new airport security regulations, Rhyne was forced to produce manicure tools that were not metal so they could be carried on airplanes by her customers. Additionally, many potential customers stopped traveling immediately after 9/11, and those who did often were delayed in long lines at security checkpoints. Getting business levels back to pre 9/11 levels has been difficult for Ms. Rhyne.⁵

Rebuilding efforts following a disaster can be an economic gain for certain businesses participating in the rebuilding. For example, essential businesses in a disaster zone such as grocery, medical, and construction will be in high demand. On the other hand, if your product or service is not essential to an area's recovery, customers may have very little need or money for what you are offering in the near term. Think of how the disaster will affect your customers' spending habits.

- *Enlist outside support.* To make the best decision to move your business forward, you must have a grasp of how the disaster has impacted those people connected to your business. Contact suppliers, employees, and customers to inform them of your situation. Many will offer support or alternatives for you to consider. Manufacturers might be able to ship directly to your customers, or suppliers can assist in payment schedules. Just knowing these options exist for your small business can help in making the final decision.
- *Assess your financial position.* Vital to the critical decision of how to proceed with your business is assessing your financial position. Insurance agents need to be contacted to determine what and how much will be covered. Another source of funds is the Small Business Association (SBA). The SBA grants loans to businesses that have suffered tangible losses due to a natural disaster. The maximum limit on real estate damage is \$200,000, and the amount that can be borrowed depends on the actual cost of repairing or replacing the damage, less any money received from insurance companies, other reimbursements, or grants.⁶

When a 1997 flood put the late Ruby Wyatt and her Falmouth, Kentucky, grocery store out of business, she didn't miss a beat. She just toughened up and rebuilt the family-owned operation. In fact, it was business as usual for the 82-year-old proprietor of Wyatt's SuperValu. "I have not shed a tear, nor will I," she is quoted as saying. "I will rebuild my store and move on with my life."

And within 66 days, that's just what she did. With help from her Minneapolis-based supplier, SuperValu Corp., Wyatt was quickly approved for more than \$1.3 million in U.S. Small Business Administration disaster loans.

The never-say-die entrepreneurial spirit of Wyatt and her daughter Dixie Owen caught the attention of federal officials, and the duo was named the winner of the 1998 Phoenix Award for Small Business Disaster Recovery. At the ceremony honoring them in Washington, D.C., Ruby Wyatt announced to the audience that she appreciated the SBA's faith in giving a 30-year loan to an 83-year-old woman and that she was looking forward to living long enough to pay it off.⁷

Small businesses impacted by a disaster might be eligible for tax breaks from the IRS to offset losses, especially if situated in a federally declared disaster area. In general, the IRS allows certain income tax deductions following a casualty for a loss of property resulting from a sudden, unexpected, or unusual event. A taxpayer can deduct the new amount of actual property loss resulting from damage to, or destruction of, property. To qualify for a casualty loss deduction, the taxpayer must prove to the IRS that a loss occurred and that the loss was caused by a casualty.⁸

Once the owner understands all the financial requirements necessary to bring the business back to operation, he or she must decide whether to reinvest in the business or to shut it down. In essence, a business plan should be developed just as if the business were a new startup. In the final analysis, the small business owner who carefully considers options, enlists the support of outside resources, makes new operating plans, and accurately assesses the financial situation will be in the best position to survive a devastating disaster.

e-Business Disasters

e-Business is made up of businesses that use "the facilities available on the Internet" to sell their products and services. Therefore, the discussion of disasters and contingency and recovery planning that affect businesses in general are also relevant to e-business

firms. However, given e-businesses' reliance on the Internet and digital information, it is useful to look at a different kind of disaster—the loss of vital business information. Imagine losing your entire customer list, your accounts receivable data, or your inventory records. You could spend weeks, even months, reconstructing this data. In a worst-case scenario, you might not be able to reconstruct it at all.

In today's highly computerized business world, many firms are exposed to the possibility of a sudden loss of information. Natural disasters, computer viruses, mechanical failures, and electronic crime can all result in catastrophic data loss. No matter how hard we try, we can't prevent disasters from occurring. But we can take forceful steps to safeguard data and to ensure that computer information can be retrieved and restored in the event it is lost.⁹

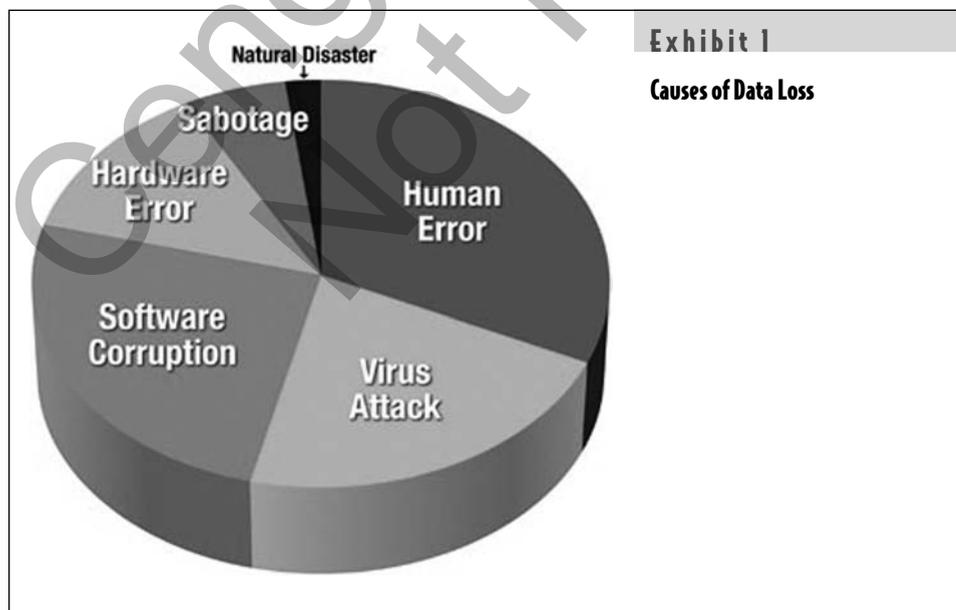
What Causes Data Loss?

Among other causes, data loss can be attributed to system error, human error, virus attacks, sabotage, and natural disasters. See Exhibit 1.

Human causes of data loss include intentional or accidental deletion or overwriting of files. Virus damage, operating system or application software bugs, or failed upgrades may also cause data loss. Common physical causes of data loss include power loss or power surge, overheating, electrostatic discharge, and any kind of physical damage to the storage device or medium.¹⁰

In 2003, the total cost of U.S. data loss was estimated to be \$18.2 billion. This is based on the following computation, which was developed by Dr. David M. Smith of Pepperdine University.¹¹

Security breaches of a company's business data can also be quite costly. A recent survey conducted by the Ponemon Institute found that the average cost to a company from a security breach worked out to be about \$14 million. According to the survey, that amount included actual costs of internal investigations, outside legal defense fees, notification and call center costs, investor relations efforts, discounted services offered, lost employee productivity, and the financial hit from lost customers.¹²



Total U.S. Data Loss Estimates

Types of Loss		Average Cost of Each Data Loss
Value of the Lost Data		\$3,400
Technical Services Cost		340
Lost Productivity		217
Total Cost of Each Data Loss		3,957
Number of Data Losses (estimate)	x	4.6 million
Total U.S. Data Loss Cost	=	18.2 million

How Can You Prevent Data Loss?

Companies can do a number of things to prevent data loss.

- Back up all important files. External drives are an excellent choice for this backup task. Then test and verify your backup.
- Use Windows XP System Restore Points before making any significant changes to your system.
- Write a contingency plan and practice restoring your data in case of problems. Your contingency plan should require, at a minimum:
 - Locating all available backups, including dates and types of backup.
 - Listing and locating all original software packages, detailing updates since the original installation.
 - Locating and making ready an alternate computer.
- Never upgrade software or hardware without a complete, verified backup available in case you need to restore data.
- Document your systems and archive original copies of your software in a safe place.
- Ensure proper environmental conditions (stable temperature, controlled humidity, and cleanliness) and proper handling to avoid static discharge and accidental dropping.
- Delete unused files and applications. Use a disc defragmenter.
- Physically secure systems from intruders.
- Deploy firewalls and virus protection.
- Prepare for physical disasters, including use of offsite storage for backup.

In the event you do suffer data loss, there are a number of companies that specialize in data retrieval including retrieving information from hard drive crashes, damaged media repair, virus attacks, data recovery, and Windows 2000 or XP password recovery. These companies can be found through Google, Yahoo!, Ask Jeeves, or other popular search engines.

Resourcefulness is often key to recovering lost data after a disaster. Gerry Nolan, president of disaster recovery consulting firm Eagle Rock Alliance in West Orange, New Jersey, recommends that companies ask clients, vendors, strategic partners, and even employees to scan the disk drives of their undamaged computers to see if useful files may have been stored on them. Gruzen Samton, the architectural firm that lost most of its records in the World Trade Center attacks, did just that, retrieving a number of computerized design files in the form of e-mail attachments that had been sent to consulting engineers. Some disaster survivors have been able to salvage damaged hardware as well as data by having useful information removed from damaged machines, then having the system refurbished, reinstalled, and reloaded with the data.¹³

Disasters come in many forms. It is the obligation of business and companies specifically, to anticipate, plan, and deal with those factors that affect their future. If

companies plan sufficiently, they can survive any calamity. If they do not, they will suffer the consequences, which may include their very demise.

EXERCISES

1. Disaster Assessment

After working at the library all afternoon, you return to your dorm room and find the entire building flooded. All papers, notebooks, binders, etc., are destroyed, as is your computer hard drive. Your checks and bank statements are a soggy unreadable shredded mess. Your clothes are in a soaked pile. Your palm pilot is missing, as is your cell phone, which you inadvertently left behind in your hurry to get to the library. Fortunately, you still have your wallet with \$50, driver's license, one credit card, and school ID. Everything else is gone. The semester is almost over, and all your work was on your computer. You need to act to save your academic year.

1. Assess the damage by listing all the items that are lost or damaged.
2. Determine which items must be replaced immediately and which can be delayed.
3. Determine the financial implications of repair or replacement. For example, do you need a new computer?
4. Determine sources of loans.
5. Determine any outside sources of help. For example, had you emailed rough drafts of any papers to anyone?

Use the chart below to construct your assessment:

Item(s)	Importance Level	Degree of Damage (usable/fixable/ gone)	Must Be Replaced (now, soon, can wait)	Replacement Source (friends/school, etc.)
1.				
2.				
3.				
4.				
5.				
6.				

6. Having gone through steps 1–5, what plans should you be making right now to minimize losses and damage in case of a real disaster to your living quarters?

2. Personal Document Inventory

Make a list of the ten most important documents you possess. The list might include items such as your birth certificate, passport, etc. Do you know where they are? If so, are they safe from fire, flood, theft, or any other possible mishap?

3. Research Assignment

Security breaches of computerized data cost corporations vast amounts of money. Identify a company that has suffered a security breach and the resulting business consequences both in financial terms and in loss of public trust. What could the company you have identified do differently?

The Importance of Leadership in Dealing with Disasters

Disasters require effective leadership. To be truly effective in dealing with a catastrophe, leadership should occur before, during, and after the disaster.

Analyzing Leadership

Management experts such as MIT Sloan Professor Thomas Kochan and his colleagues across MIT have been analyzing leadership as it relates to major disasters to determine what went right, what went wrong, and what needs to change. Kochan spoke recently at a MIT symposium, “Big Questions after Big Hurricanes.” In his lecture, he drew comparisons to President Franklin D. Roosevelt’s response to the bombing of Pearl Harbor. “FDR instinctively understood the need for cooperation and unity in his time of great crisis,” Kochan observed. “Within two weeks of Pearl Harbor, he brought the nation’s business and labor leaders together with key government officials and insisted they set aside partisan differences and work together to help the country through its crisis.”

In response, they reallocated resources to produce the aircraft, ships, and radar systems needed to win the war. In addition, they worked together to maintain labor relations, train a new generation of workers, and hold inflation in check.

Kochan contends that the present leadership in Washington failed to draw coalitions of critical interests to address the aftermath of recent natural disasters and the terrorist attacks of 9/11. He blames the “go it alone” mindset of the Bush administration resulting in uncoordinated efforts to prepare for and respond to Katrina. “Government leaders must recognize a basic principle: Government cannot and need not manage crises of this magnitude alone. It needs to draw on and work in coordinated fashion with the full range of resources available.”

The Issue Is Leadership, Not Technology

MIT supply chain expert Yossi Sheffi thinks many shortfalls led to the crisis in the Gulf Coast recovery effort: “Instead of taking decisive actions, city, state, and federal officials argued with one another, communications broke down, and too many civil servants . . . did not have the urgency or the passion required.” Sheffi believes that the troubles in the Gulf Coast weren’t about communications technology, as some observers had proposed, but about leadership. “The issues . . . have nothing to do with

technology. They entirely have to do with reporting lines, organization lines, agreeing to work together. The technology is there.”¹

Lack of Leadership in New Orleans

Examples of what can happen when there is a leadership void was pointed out in a recent CNN article that stated: “As violence, death, and misery gripped New Orleans and the surrounding parishes in the days after Hurricane Katrina, a leadership vacuum, bureaucratic red tape, and a defensive culture paralyzed volunteers’ attempts to help.”² Consider these events:

- Dr. Bong Mui and his staff evacuated 300 patients after three hellish days at Chalmette Medical Center. When they arrived at the New Orleans airport, they were amazed to see hundreds of sick people. They offered to help, but FEMA officials said they were worried about legal liability. “They told us that, you know, you could help us by mopping the floor.” And so they mopped, while people died around them. “I started crying,” he recalled. “We felt like we could help and were not allowed to do anything.”
- Steve Simpson, sheriff of Loudoun County, Virginia, sent 22 deputies to New Orleans equipped with food and water to last seven days. Their 14-car caravan, including four all-terrain vehicles, was on the road just three hours when they were told to turn back. The reason, Simpson told CNN: A Louisiana state police official told them not to come. “I said, ‘what if we just show up?’ He says, ‘You probably won’t get in.’” Simpson said he later learned a dispute over whether state or federal authorities would command the law enforcement effort was being ironed out that night. But no one ever got back to him with the all-clear.
- FEMA halted tractor trailers hauling water to a supply staging area in Alexandria, Louisiana, *The New York Times* quoted William Vines, former mayor of Fort Smith, Arkansas, as saying. “FEMA would not let the trucks unload,” he told the newspaper. “The drivers were stuck for several days on the side of the road” because, he said, they did not have a “tasker number.” He added, “What in the world is a tasker number? I have no idea. It’s just paperwork and it’s ridiculous.”
- Firefighters who answered a nationwide call for help were sent to Atlanta for FEMA training sessions on community relations and sexual harassment. “On the news every night you hear, ‘How come everybody forgot us?’” Pennsylvania firefighter Joseph Manning told *The Dallas Morning News*. “We didn’t forget. We’re stuck in Atlanta drinking beer.”

Distributed Leadership Model

These situations can be avoided with proper leadership. MIT Sloan Professor Deborah Ancona notes that natural disasters call on all of a person’s leadership skills. And good leadership requires delegation and dissemination of responsibility. She points to MIT Sloan’s pioneering Distributed Leadership Model (DLM). The core of leadership development and research at MIT Sloan, the DLM moves away from “command and control” in favor of “cultivate and coordinate.”

Ancona asserts, “What is clear is that during such disasters you need leadership at all levels. Executive leadership to devise overall strategy and people on the ground with the authority and skills to act of their own accord when necessary. During the tsunami, you saw doctors who took it upon themselves to organize.” This is the kind of initiative that is needed to deal with circumstances that no one can predict.

This, she notes, is what the DLM model is all about: understanding the context in which one is operating, developing productive relationships and networks, visualizing the desired outcome, and inventing ways of working together to realize that vision. “Natural disasters demand all these skills,” Ancona observes. “They are important aspects of a leader’s repertoire.”

Leadership According to Rudolph Giuliani

An example of a person who has exhibited these qualities is former New York City Mayor Rudolph Giuliani. Dubbed “America’s Mayor,” Giuliani emerged from 9/11 as a symbol of national strength and resilience. Unlike many in Washington during the 1990s, Giuliani and his associates saw terrorism as “an ongoing threat” and they prepared the city for the inevitable next attack. Among other things, his administration formed a “Mayor’s Office of Emergency Management” to coordinate the city’s response to potential attacks years prior to 2001. Giuliani created a state of the art emergency command center. His critics mercilessly pounced on the idea, dubbing it “the bunker,” and implying that this was the work of a power-hungry and slightly paranoid politician. *The New York Times* said of it: “Some people think it’s New York’s funniest bunker since Archie.” (There was a problem with the “bunker,” however. Since it was on the twenty-third floor of Seven World Trade Center, it was destroyed when the building fell.) Nonetheless, it was a tangible example of a leader’s preparation for a potential catastrophe. Following the terrorist attack, Giuliani and his management team set up another emergency control center within blocks of ground zero from which they managed the rescue effort.³ Giuliani has written a book entitled *Leadership* (Hyperion), which provides his philosophy on leadership and what he learned from 9/11. Some of his observations are:

- **Leadership Is Learned**—While many people appear to have an innate ability to lead, most learn from their life and business experiences and then put those lessons into practice. Giuliani wrote, “The greatest leadership you ever have is the ability to lead your own life.”
- **Understand Good Leaders, Not Good Leadership**—Giuliani wrote, “Read biographies of leaders you admire. That will tell you more about leadership than any leadership book.”
- **Learn Throughout Life**—Education doesn’t stop when you quit attending school. In Giuliani’s words: “That’s how I ended up on the morning of September 12, reading a biography of Churchill. I was thinking, ‘I’m going to deal with something I haven’t dealt with before. Let me see if I can learn something.’”
- **Stand Up to Bullies**—It’s important to have a sense of justice . . . “to realize you have to stand up to people who take advantage of those who are weaker.”
- **Discourage Yes-Men/Women**—As the saying goes, if we both have the same opinion, one of us is unnecessary. Build your team with people who don’t think exactly like you.
- **Reflect, Then Decide**—Before making important decisions, learn everything you can about the topic. Giuliani said that as soon as he found out he had cancer, he began collecting information and suddenly felt safe, because then he could go to work doing something about it.
- **Don’t Listen to Critics**—Anytime you’re in charge, there will be people “chirping” in the background. Giuliani didn’t let them distract him from doing what he believed was right.
- **Become an Expert**—Giuliani wrote: “When people come to you to ask for advice and information because you know more about a subject than they do, that’s a sign of great leadership.”

- **Be Respectful**—Use the Golden Rule: treat others as you want to be treated. “People know when you’re talking down to them, and they will not respect you,” he said.
- **Stay Close to Your Customers**—In Giuliani’s case, this meant being with constituents, New Yorkers, in the weeks after 9/11. Remember him in the NYFD baseball cap and blue jeans, there to provide comfort and determination for all.
- **Communicate and Inform**—In all of his press conferences and briefings after 9/11, Giuliani provided facts and details, understanding the importance of candid statements at all times. Always let your team know what’s going on.⁴

Leadership Lessons from Hurricane Katrina

There are also plenty of examples of what happens when there is a lack of leadership skills when dealing with disasters. Hurricane Katrina is a case in point. It is clear that federal, state, and local governments were slow to react and contributed to the problems in New Orleans following Katrina. The Bush administration has been criticized for underfunding recommended levee repairs. Bush himself has been accused of using FEMA as a dumping ground for political appointees. Michael Brown, the now disgraced former head of FEMA, was severely criticized for FEMA’s late and inadequate response. Louisiana Governor Kathleen Blanco seemed by most accounts to be unnerved and uncertain when called upon to take action. When asked what her plans for recovery were, she asked all who were listening to her to join her in prayer. New Orleans mayor Ray Nagin was apparently so overwhelmed by the hurricane that he didn’t carry out the city’s emergency plan.⁵ The picture of over 250 submerged school buses in a New Orleans parking lot that could have been used to carry tens of thousands of people to safety will be his legacy for years to come.

The common thread here is a lack of strong public sector leadership. There was not an assuring, confident, powerful voice amongst them. At a time when the people of the region needed to hear someone tell them that there was a plan, that there was resolve, and that this challenge would be met, they were instead inundated with government officials who reflected anguish and concern but did not bear the burden of leadership. There was no shortage of appropriate outrage, but there was no one who said, “we will fix this.” There was no one who said, “we will not let this defeat us.” There was no one who was willing to both wade in the water and offer hope. During the first several days after the hurricane hit, there was no sound bite, no film clip that would assure the residents of the region and the citizens of this country that strong people were in charge, that they had resolve for the future, and that those who had responsibility and resources would make this all better.

What can we learn that will help our public sector officials better deal with catastrophes such as Katrina? According to Jeff Coker who has worked with MIT’s Distributed Leadership Model, “With the scale and complexity of contemporary disasters, the concept of distributed leadership is essential. One person, one team, one organization is usually not enough to manage all the issues related to such calamities.” According to Coker, “Leaders should force themselves out of restrictive command and control hierarchies and bureaucracies that might be effective in controlled crises. Those in charge must build relationships outside their usual networks. In times of crisis, it is these informal relationships that can make the difference. During Katrina, for example, FEMA could have worked with media outlets to get information out quicker and to get the latest news from the affected areas.”

The proof of the effectiveness of the distributed leadership model is in its practice. Nathalie Butcher, an MBA student, took the knowledge learned during her first year at MIT Sloan to Indonesia to help victims of the devastating Indian Ocean

tsunami. Based in Jakarta, she worked for the Indonesian nongovernmental organization (NGO) United in Diversity helping tsunami victims to rebuild businesses and launch new ones.

Every Disaster Is Different

The challenge, Butcher says, is that every disaster is different and calls for a plan based on the resources and limitations available at that moment in time. She says there's a strategic timeline that must be followed for relief efforts to be productive. "The first step is to get people out of immediate danger. Get them medical attention, food and water, and some form of shelter. Then get people on the ground to survey the situation. Where is the present and future danger? Get communications established. Get people into the unsafe areas to find out what's needed and arrange for the necessary help." The sequence of relief work, Butcher says, is essential: "If you build a school before you've given somebody a tent, your priorities are out of whack." She has seen firsthand the domino effects that hamper relief efforts. "You can't build a house if you can't get the building materials there. You can't get the building materials there if the bridges are out. And you can't get the bridges fixed if you can't get an engineer in to look at them."

The critical flaw in recent disaster relief situations, MIT Professor Otto Scharmer believes, is responding to today's issues based on yesterday's realities—what he calls "downloading." When we are confronted with new challenges, he says, we have to invent new solutions. And the best way to reinvent is to bring together a coalition of individuals with a stake in the outcome. "In disaster relief situations," Scharmer emphasizes, "multiple stakeholders must come together. Business planners, government officials, nongovernmental organization representatives, and all players critical to solutions need to collaborate in jointly addressing the situation on the ground."

Theory U

When it comes to building innovative collaborative systems, Scharmer has plenty of experience putting research into practice. He is cofounder of Project ELIAS (Emerging Leaders for Innovations Across Systems), an alliance of nine global institutions from all sectors that includes BP, Unilever, the UN Global Compact, the World Bank, nongovernmental organization players, and members of the MIT community. Scharmer is also the architect of the pioneering Theory U, which entails sensing and prototyping strategic microcosms of the future. Relative to Theory U, Scharmer sees four essential capabilities for leading disaster management:

1. Be in the moment. Disengage your routine and absorb the situation at hand. Devise new networks of people close to the situation.
2. Reflect deeply. Don't make assumptions. Envision the future. Imagine multiple scenarios.
3. Summon an authentic leadership presence. Be open. Access your deeper sources of intuition.
4. Innovate. Innovate out of the context of the disaster you face. Then improve as you go along.

Scharmer says failure to approach each challenge anew from a multi-stakeholder perspective leads to major breakdowns in the handling of catastrophes. By way of exam-

ple, he points to issues of sustainability and global warming. “Global climate issues can’t be addressed by single institutions or sectors,” he says, “but by their root problems.” Trying to solve new challenges with antiquated systems, he believes, spells disaster in an era of increasing disasters.

Act on Murphy's Law

According to MIT Sloan Professor Jay Forrester, “Almost every natural disaster, like almost every corporate and social disaster, arises out of a systemic set of policies that created, or at least contributed to the disaster. Usually, the disaster arises from failure to internalize and act on one of ‘Murphy’s laws,’ to the effect that if something can go wrong, it will,” he explains. “Regarding the recent New Orleans disaster, it was well known that the levees would likely fail in a major hurricane, but they had not yet, so the hope was that they would not in the future.”

Forrester points to the U.S. space shuttle disasters as another case in point. “Such a calamity,” he says, “had nearly happened before, but rather than acting to remove the potential causes, managers under budget and political pressures chose to look the other way. Even the Pakistan earthquake disaster is significantly a result of not building for earthquake resistance in an earthquake region.”

Forrester observes that while it’s the anticipators who deserve credit for disaster averted, it’s the disaster managers who attract the attention. “People, politics, and the press are more excited about the hero who copes with a disaster than the people who quietly prevent it.”

Leadership in Action

In the wake of Hurricane Katrina, Hands On Network, a network of 52 local nonprofit community service organizations in partnership with the Hands On Network Corporate Service Council, a national alliance of 29 corporate CEOs and civic leaders, has announced an unprecedented initiative to mobilize 6.4 million additional volunteers over the next two years. This represents a 10 percent increase in volunteerism nationwide and includes the training and mobilization of 100,000 volunteer leaders with 10,000 of those leaders focused on long-term Hurricane Katrina relief and rebuilding.

Throughout the two-year effort, each Council member company will set annual volunteerism goals, cultivate project leaders, plan local projects, marshal resources, share best practices, motivate participants and performance, and measure results. Hands On Network will provide on-the-ground project management and a link between the companies and community organizations to achieve real community impact and change.

Spearheaded by Bob Nardelli, chairman, president and CEO of The Home Depot, and Michelle Nunn, co-founder and CEO of Hands On Network, the Council includes CEOs from 3MCompany; AARP; Accenture; Albertson’s, Inc.; BellSouth Corporation; The Case Foundation; Cisco Systems, Inc.; Civic Enterprises; The Coca-Cola Company; Dell, Inc.; Delta Air Lines; Discovery Communications, Inc.; Fannie Mae; FedEx Corporation; General Electric Company; The Hitachi Foundation; Home Depot, Inc.; KaBOOM!; Masco Corporation; Nuclear Threat Initiative; PricewaterhouseCoopers LLP; Qwest Communications International, Inc.; Retail Industry Leaders Association; SAP America, Inc.; Starwood Hotels & Resorts Worldwide, Inc.; Turner Broadcasting; U.S. Chamber of Commerce; Young & Rubicam Brands; and Yum! Brands, Inc.⁶

EXERCISES

1. Take Me to Your Leader!

Step 1

Identify someone you know personally who in your opinion is a good leader and someone you would want around in an emergency. List as many personal traits (courageous), characteristics (well-respected), and behaviors (always reading) of that person as you can in the next five minutes.

Personal Traits	Characteristics	Behaviors
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Step 2

Compare your lists with those of 3–4 of your classmates. Identify which traits, characteristics, and behaviors these perceived leaders appear to have in common.

Step 3

Based on your comparison, can your group identify a prototypical leader?

2. Personal Evaluation

On a scale of 1 to 5 as detailed below, evaluate yourself on Rudy Giuliani's leadership criteria.

5 = always

4 = mostly

3 = sometimes

2 = rarely

1 = never

1. I try to apply lessons from past successes and failures. _____
2. I read biographies of great leaders and learn from them. _____
3. I stand up to bullies and aggressive people. _____
4. I respect those who disagree with me. _____
5. I get the information I need to make a good decision. _____
6. I do not let naysayers influence me when I know I am right. _____
7. I try to gain expertise in important areas. _____
8. I treat everyone with respect and good manners. _____
9. I maintain relationships with friends and colleagues. _____
10. I am a good communicator. _____

What areas do you need to work on to build your leadership skills?

3. Research Assignment

Wal-Mart was singled out for excellent performance during the Hurricane Katrina disaster. What is the leadership culture like at Wal-Mart and how did it help Wal-Mart respond to the disaster?

Disasters and Human Resource Management

Human resource management plays a crucial role in dealing with disasters both in the public sector in helping to restore basic services to a community and in the private sector in helping companies to get back up and running.

Disaster plans typically address in great detail critical aspects of how essential services in a community (such as police and fire protection, public works, and utility services) will be maintained and deployed during and after a disaster. However, often-times, the staffing of these services is overlooked if assigned personnel have difficulty responding to a crisis. In these instances, human resources (HR) can play an important role by doing the following:

1. *Maintaining accurate emergency contact information.*
2. *Identifying additional resources for staffing essential services.* The HR professional can assist in addressing this need by:
 - Identifying the “special skills” of existing employees. Many employees have skill sets and abilities that they do not utilize in their normally assigned job function. Maintaining an “emergency resource roster” can provide a list of personnel within an organization that can be reassigned during emergency situations to areas of greater need. The focus should be on identifying those skills and abilities that require special training or licensing (e.g., a commercial driver’s license).
 - Identifying other sources for additional personnel. This may include temporary staffing agencies, union halls, and neighboring communities (assuming they aren’t dealing with the same disaster).
3. *Providing flexibility in personnel rules and/or collective bargaining agreements.* In a time of emergency, rules and regulations regarding work jurisdiction, job duty assignments, working hours, etc., will need to be suspended in whole or in part in order to allow the appropriate personnel deployment to occur.¹

As it relates to the private sector, not only must companies rebuild the physical infrastructure of their businesses, they also must resolve a myriad of workplace challenges. One of the most important and difficult challenges is to restore their workforces. While companies are rebuilding their physical plants or sites and their equipment is being restored, Human Resource Management should be working toward finding the

workers who are the backbone of the business. This is not always easy, since many of the original employees may have dispersed to other locations and taken other jobs. Clearly, this is what happened in New Orleans after the destruction caused by Hurricane Katrina.

Consider Tiffany Manning's plight. She had a full-time job as a mental health counselor for adolescents and teenagers with behavioral and psychiatric disorders. But today, she is one of the thousands of evacuees who are no longer getting a paycheck. The situation is creating a surge of displaced and unemployed residents now pouring into job fairs and temporary hiring centers in an anxious search for work.

"I had \$40 on me when I left, and now I only have \$20," Manning, 25, said in a phone interview. She is no longer getting any income and is staying with her grandmother in Haynesville, Louisiana, and hoping for full-time or temporary work. "I'm thinking about relocating; I'm not sure. But I'm here trying to begin a brand new start."²

Many evacuees are struggling to find any type of work in the wake of Katrina. Jenny Bradley, 57, left her home in Terrytown, Louisiana, to stay with her daughter in Memphis before the hurricane struck, thinking she'd be gone only a few days. Instead, she's looking for temporary jobs through Randstad, a staffing firm. She recently got work for four days a week answering phones at a nursing home.

After all she's been through, Bradley says, she wants a permanent job, because she doesn't plan to go back. "Looking for something is really tough," says Bradley, who had worked as a contractor handling accounting and reservations for a Navy Reserve activity center. "I'll flip burgers. I don't care. (Work) keeps my mind off everything."³

In light of stories like this, it is important for companies to plan ahead to ensure that they can maintain their current workforces in the face of an emergency. Their first priority should be to keep the employees that have made their business successful, as opposed to starting all over again. They can accomplish this goal in several ways, as follows.

1. *Maintain communication with displaced workers.* After a disaster, many displaced workers may find themselves in unfamiliar locations, without much more than the clothes on their back. Companies should make it easy for their employees to contact them. One approach is to create a web site for employees to make contact with the company from any location. The web site might include a toll-free number that could be passed along to employees without Internet access. Another approach is for employers with operations in cities where evacuees have relocated to establish a communication center that employees can contact.
2. *Continue paying wages.* Government aid may not be available immediately, or in large amounts. To the extent they can, it is in an employer's best interest to continue paying their employees who have been devastated by a disaster. Oftentimes, it will be cheaper for the company to keep their employees on the payroll than go through the process of finding and hiring adequate replacements.
3. *Transfer workers to other operations.* In the aftermath of the 2005 hurricanes, it is becoming evident that thousands of people will not return to the hardest-hit areas until an extensive rebuilding effort is completed or they won't return at all. Employers should consider whether affected employees can be transferred to other operations in surrounding areas so that their valuable skills and experience are not lost. Once the rebuilding is complete, these employees could be an integral part of returning to the impacted area and reestablishing operations.
4. *Institute flexible leave policies.* Most company handbooks make no allowance for the type of disaster that befell the Gulf Coast in 2005. Flexibility and compassion should be the order of the day. Moreover, it is important to note that many employees affected by the storm will qualify for family and medical leave,

bereavement leave, or other types of leave provided under either company policy or federal and state laws. Extreme care should be taken before denying leave or terminating employees for a failure to return to work.

5. *Make medical benefits accessible.* Many affected employees use medical insurance to assist with their recovery after a disaster. Companies should consider providing benefit information on company web sites or through communication centers so that employees are best able to address issues that might arise.
6. *Promote Employee Assistance Programs (EAP).* Most employers have EAPs either separately or as a part of their health insurance benefits. Employers should ensure that their employees understand their benefits in the event of a disaster by making qualified counselors available on site or in areas where a large number of employees have evacuated. These services are invaluable and may facilitate employees returning to normalcy, including the resumption of employment.⁴

TRAINING

It is widely accepted that training is one of the most important tools that human resource managers have in preparing for emergencies and in reducing the impact of disasters. The use of emergency preparedness training can vary significantly from the public sector to the private sector, as well as internationally. The following are some examples of crises training that various organizations engage in.

Public Sector

Eleven years ago, reeling from flawed responses to Hurricanes Hugo and Andrew, the Federal Emergency Management Agency launched the Higher Education Project to ensure that disaster officials at all levels of government were trained to deal with catastrophes. The project consisted of persuading colleges to offer degrees and certificate programs in emergency management, aimed at producing a new breed of professionals who could assume posts often held by ill-equipped appointees. Students in colleges across the country now can take courses in subjects like quarantine and epidemiology; disaster-specific instruction for floods and earthquakes; lectures on politics, planning, and leadership; and onsite experience in everything from community emergencies to the Asian tsunami.

In 1994, there were four college programs in emergency management. Today there are 121 college programs, and 110 more are under consideration. Salaries are rising in the field, to an average of \$45,390 annually, according to May 2004 figures from the Bureau of Labor Statistics, though managers in small jurisdictions might make half that and those in the private sector can make double. The U.S. Department of Labor projects emergency management will be one of the fastest-growing fields through 2012.⁵

Wayne Blanchard, who oversees FEMA's Higher Education Project, points out that "disasters are a growth business in this country." One result of that growth is a new breed of emergency managers with far different demographics than a decade ago. More have college degrees and have chosen the field as a first career. They are younger and more diverse.

Why then, with advances in the quality of emergency management and with more qualified people, was the response to Katrina so inept? According to Blanchard, it will take five to ten more years before the true fruits of the program are realized, because the people it attracted are still in lower-level positions without the authority to lead a response to an emergency.

Private Sector

Disaster preparedness training in the private sector can vary widely depending on the nature, size, and location of the company, but it is probably best segmented by large and small organizations. Large companies like IBM are very sophisticated in their preparation for catastrophic events, and in some areas, they are the envy of federal governments. IBM has a Crisis Response Team that has responded to more than 70 critical incidents in 49 countries during the last decade. The team provides immediate, 24/7 assistance, including international humanitarian relief, emergency management and on-site services, as well as business services to government and business entities in the United States and around the world.

After the Tsunami in Southern Asia, IBM deployed its Crisis Response Team and more than 700 employees, business partners, and customer volunteers across the four countries of India, Sri Lanka, Indonesia, and Thailand. It was clear within the first week that the tremendous challenges faced by these governments, as well as relief agencies, businesses, and community organizations could be aided significantly through technology. Among the services that IBM provided were tracking and identifying the missing, dead, and injured, as well as assisting displaced individuals and orphans in finding relatives.

After Hurricane Katrina, IBM deployed its Crisis Response team to Baton Rouge to address critical health and safety needs. Among their contributions were:

- *Missing Person Reunification Project.* IBM developed a number of web sites and local registries to help evacuees and the public locate missing family members, friends, and colleagues.
- *Jobs4Recovery.* In partnership with the U.S. Chamber of Commerce, local chambers in the Gulf region, and nonprofit partners, IBM launched a new job search web site for those people who had an immediate need for employment.
- *American Red Cross Disaster Relief Self-Registration Internet Site.* IBM designed and developed the American Red Cross Disaster Relief Self-Registration Internet Site, which captured and stored demographic and family data in a secure data base. This was particularly helpful for evacuees to apply for benefits online with Red Cross assistance.
- *Centers for Disease Control Support.* IBM provided support to the Centers for Disease Control of the U.S. Department of Health and Human Services to respond to emergency health needs and ensure that evacuees had access to prescriptions and care for chronic illnesses and trauma resulting from the disaster.⁶

It is evident that large companies with technical expertise such as IBM can provide disaster assistance that cannot be duplicated by local and national governments or agencies. Companies with expertise in specialized areas can cover a wide variety of needed assistance including reconstruction (by companies such as Bechtel and Halliburton), medical supplies (Merck and Pfizer), distribution (FedEx and Yellow Freight), and communications (AT&T and Motorola), to name a few. The list of companies with unique capabilities that could be useful in emergencies is quite extensive. It is important that agencies responsible for emergency management identify these companies in their areas, develop relationships with them, and create plans to utilize these private-sector resources in anticipation of crisis situations.

Small companies have their own set of issues. Due to fewer managers and lack of management depth, it is sometimes difficult to separate training from planning. Put another way, if employees in a small firm are familiar with the company's emergency plan, they are in essence trained as to what to do in a crisis situation.

Every business, regardless of its size, should perform some kind of risk assessment and develop a crisis management/business continuity plan. Small businesses, in advance of a problem, should scout backup sites where they can operate, or at least protect key

assets, in the event of a major disaster. This could be as simple as renting a motel room and a set of storage lockers in another community. Backup copies of all critical business data, such as insurance policies, incorporation papers, bylaws, and customer and vendor records, should also be stored offsite.

One of the major problems after 9/11 was for companies to account for their employees, to determine who was dead and who was alive. Plans should be developed wherein employees are given a central phone number to call within a specified time after a disaster to acknowledge their condition and location. Communications are another major problem. After 9/11, many landlines and most cell phones didn't work in New York due to traffic overload. Companies should consider purchasing at least a limited number of satellite phones to ensure that they will have uninterrupted communication with their clients, vendors, and other locations in the event of an emergency. Satellite phones are no longer prohibitively expensive and can be deducted as a business expense.

One of the major problems arising after most disasters is the interruption of power. Almost every business enterprise is dependent on electricity. Virtually every emergency planning guide recommends that businesses acquire generators to provide light, heat, and power for their critical equipment.

In the final analysis, disaster planning and preparation begins and ends with individual employees and their families. To this end, every business, small and large alike, should have survival kits, with a first-aid component at every location. As well, employees should be encouraged to have similar, though less extensive, kits at home and in their car.

A major disaster can spell the end for a small business that is heavily damaged or destroyed. Its customers and workforce may drift away, and it may be difficult or impossible to find adequate financial resources to restock its shelves or replace equipment and technology. Indeed, after Hurricane Andrew, two-thirds of all businesses that remained closed for more than three days never reopened their doors. This is why it is so important for small businesses to take necessary and appropriate steps to protect themselves and their employees in the event of a major disaster.⁷

International

Obviously, disaster preparedness training is not unique to the United States. According to Robert Thayer of the U.S. Agency for International Development (USAID), disaster preparedness is particularly needed in Latin America and the Caribbean because the countries in this region are vulnerable to a wide range of natural hazards, including earthquakes, hurricanes, flooding, tsunamis, landslides, volcanoes, and drought. Some countries are also vulnerable to civil unrest resulting from political or economic instability.

Since 1989, USAID's Office of Foreign Disaster Assistance has trained more than 34,000 individuals and certified more than 2,100 instructors in 26 countries. The focus of this program has been on disaster management, training methodologies, technical assistance, and training courses including "collapsed structure" search and rescue, damage and needs assessment, shelter management, and incident command systems. USAID-supported efforts have evolved greatly since 1989. The original emphasis was on "direct training" but then shifted to "training of trainers." The USAID strategy now is moving beyond the training of trainers and focusing more on technical assistance.

Thayer said the international community plays an important role in assisting a nation's relief efforts following a natural disaster. But he emphasized that it is national governments, not foreign governments or international organizations, that have "the local resources, the motivation, the knowledge of local conditions, and of course, the mandate to respond quickly and effectively." He went on to say that "disaster assistance is normally most effective when carried out by the affected countries themselves."⁸

As discussed in a previous section, all disasters are different, and each crisis offers its own set of unique challenges. For this reason, emergency preparedness planning, staffing, and training should be adapted to the geography, local conditions, and the type of disaster that can be reasonably expected. As a philosopher once wrote, “The future belongs to those that prepare for it.”

Exercises

1. Research Assignment

The public’s attitudes toward institutions that affect their lives often change in the aftermath of a major disaster. For example, faith in government was enhanced after 9/11 and eroded after Katrina. Religious observation increased immediately after 9/11 and then dwindled. What other examples of attitude change in the wake of a disaster have you observed?

2. Class Exercise

Make five copies of the following survey and administer it to five students outside your class. As soon as you have finished surveying, get together in a group with four classmates and combine your results. Analyze your findings. Based on the information you gathered, does it appear that recent disasters have had an impact on the students in your school? If not, what if anything should be done to increase awareness and concern about these events? Report your findings to the class. Indicate if the results were consistent with your expectations.

3. Student Survey

Please rate the following disasters in order of their impact on you personally. Use the following scale:

1. Did not change my attitudes and/or behaviors at all.
2. Minor impact on my attitudes and/or behaviors.
3. Major impact on my attitudes and/or behaviors.
4. Completely changed my attitudes and/or behaviors.

Disasters:	9/11	Katrina/Rita	Asian tsunami
Economic			
My spending habits	_____	_____	_____
Education costs	_____	_____	_____
Food/gas/clothing expenses	_____	_____	_____
My charitable giving	_____	_____	_____
Cultural/social			
Faith in religious institutions	_____	_____	_____
Concern about my fellow man	_____	_____	_____
Feelings about myself	_____	_____	_____
Desire to help others	_____	_____	_____
Political/Legal			
Faith in government	_____	_____	_____
Concern about privacy laws	_____	_____	_____
Desire for world involvement	_____	_____	_____
Technological			
Need for more technology	_____	_____	_____
Concern over privacy	_____	_____	_____

Long-Term Effects of Disasters

Disasters, whether natural or man-made, have a long-term effect on society and business. Not only do disasters change the landscape as infrastructure is replaced, they have a lasting effect on society and the way a country does business.

Effect on the United States

While the ultimate damage is probably months away from being tallied, it is clear that Hurricane Katrina has taken the highest toll—in both lives and property—of any natural disaster in the United States to date. It has wiped out a vibrant city that earlier this year was designated the number one U.S. tourist destination for families. Though the city will be rebuilt, it will take many years before it will regain its status as the leading tourist attraction. The longer-term impact, however, is its effect on workers locally and throughout the United States. The massive exodus of residents out of the New Orleans area is being called the largest redistribution in the country's population since the Dust Bowl. Millions of people are without homes, and hundreds of thousands are potentially without jobs.

Unlike the tragic events of September 11, 2001, Katrina has the potential to affect literally every workplace in the country in one way or another. As well, Katrina and the flooding that followed it have crippled many Gulf Coast oil refineries and the oil industry in general. A large segment of the shipping and trucking industries stalled, and some of the country's most crucial ports closed. Those things can't happen without having an effect on the nation's economy.¹

9/11 Effect on Consumers

In the wake of the 9/11 terrorist attacks, air travel has gone through a disruption whose effects are still being felt. Continued fear and anxiety on the part of passengers and airlines alike, the creation of a massive new federal bureaucracy (i.e., the Transportation Security Administration), and airport hassles that were once unimaginable are all accepted as common occurrences today. Increased security rules will reportedly cost U.S. airlines \$518 million in lost revenues in 2004. A portion if not all of these costs will most likely be passed on to consumers in the form of higher prices. More than three years after the worst terrorist attacks on American soil, the best way to balance passenger safety, privacy, and convenience is far from settled.²

9/11 Effect on Products/Services

Beyond passenger hardships, the Department of Homeland Security issued new regulations for all cargo leaving and entering the country to make it harder for terrorists to smuggle nuclear or biological weapons. The new regulations require shippers to provide advance manifest information, much like the advance reporting requirements for ocean cargo. The U.S. Bureau of Customs and Border Protection (CBP) will process advance cargo information into an automated targeting system linked to law enforcement and

commercial databases. This will enable CBP to identify high-risk shipments. Prior to this, most nonmaritime inbound shipments entered the United States without being screened by automated targeting systems.³

Even with these new regulations, the ability of the U.S. government to adequately screen the majority of incoming shipments especially by water transportation is woefully insufficient. Efforts to improve security in this area will continue at great cost and disruption to the free flow of products between the United States and its trading partners for many years to come.

Industries such as chemical production, fresh water providers, telecommunications companies, oil refineries, and nuclear facilities, to mention a few, will be changing the way they do business and be funding increased security measures because of the 9/11 attacks. The increased costs for these industries eventually will become higher costs for their business partners, communities, and ultimately, their customers.⁴

Global Effect

Disasters are generally geographically confined but often have global effects. The 9/11 terrorist attacks in New York City and Washington D.C. propelled the United States to war with Iraq and has resulted in major political, economic, and social changes in many parts of the world. Specifically, alliances between nations have been altered, the cost of the war has impacted U.S. borrowing and balance of payments, and the relationship between the Muslim and non-Muslim world has been strained.

The sheer magnitude of the devastation of last year's tsunami in the Indian Ocean has changed many peoples' lives forever. The tsunami struck 12 countries and displaced more than two million people, according to the United Nations, destroying their livelihoods, tearing apart families, annihilating entire towns, and leaving at least 183,172 dead.⁵ Beyond the obvious consequences that this catastrophe has had for the people involved, it also affects the world community in other ways.

Secretary of State Colin Powell recently pointed out on CNN that long-term developmental assistance for the tsunami-struck region would be required by the United States. He went on to say that food insecurity leads to civil instability and that this can ultimately become a security issue for the United States.⁶ Clearly, this is a situation where a natural disaster is dictating a country's national policy.

Psychological Effect

Another long-term effect of disasters is how they impact people psychologically. The 9/11 attacks are affecting not only survivors and their loved ones, but also those who got no closer to the tragedy than their TV sets. "Everyone, everywhere feels vulnerable," says Dr. Carol North, professor of psychiatry at Washington University in St. Louis and an expert on long- and short-term reactions to disasters. Nowhere do people feel more vulnerable than in the workplace. Because the 9/11 attacks struck office buildings, many employees now associate work with terror. "There's a sense of dramatic change everywhere—including the workplace," says Dr. Ian Anderson, deputy chairman of The Global Consulting Partnership, a Dallas consulting firm that helps employees deal with personal and performance-related issues. Employers need to be aware that the disaster has had an impact on the American psyche, one that may go on for years after the initial event. If it's not addressed, it can have a negative impact on the workplace through diminished morale and decreased productivity.

While many workers are likely to experience a sense of disillusionment, some employees will experience post-traumatic stress disorder, a very serious mental condition that, if left untreated, can deeply affect an individual's personal and work life. There's no known time limit for post-traumatic stress disorder. Researchers report that some people are still experiencing symptoms after the Oklahoma City bombing. For those suffering from post-traumatic stress disorder, things may only get worse as time passes. Sufferers may become more isolated and sink further into depression as colleagues slowly return to normal.⁷

Broad Financial Effect

With all the long-term negatives to disasters, there are also some positives from a broad business perspective. Despite the catastrophic damage and unimaginable loss incurred by residents of the Gulf Coast, history shows that natural disasters have little effect on financial markets over the long term. While certain industries such as insurance, transportation, and other regional businesses are impacted negatively by major disasters, the broad financial markets recover swiftly after an initial shock. The economic environment, monetary policy, and technical trends are much more important to the long-term direction of stock prices.

Despite a swift downturn, financial markets have rebounded quickly from major natural disasters. Several reasons account for such rapid bounces. First, large corporations, whose stocks make up the major indexes, are usually insured against business interruption and have the wherewithal to resume operations quickly. While companies might miss a quarterly profit estimate, the long-term financial impact to large companies is miniscule. Second, governments and central banks—like the Federal Reserve—often inject liquidity into the financial system to provide money for the rebuilding effort. Third, the short-term economic disruption caused by a natural disaster is often offset by the long-term economic activity generated from reconstruction. And finally and unfortunately, the majority of the damage is often incurred in poor areas, which have little economic influence to begin with, as was the case in the 2004 Indian Ocean tsunami.⁸

Summary

The purpose of this supplement is to discuss the effects of natural or man-made disasters on business. Business and disasters are connected insofar as they both touch the lives of people in a society. Business involves producing and selling products/services to satisfy people's needs. The business process utilizes a combination of material, human, financial, and information resources. Disasters disrupt these processes both in the short term and long term and, at their worst, result in death and crippling injuries to consumers.

Worldwide pandemics like the bubonic plague that ravaged Europe during the Middle Ages and the 1918 flu that killed millions of Americans generally have been kept in check by modern medical science. However, new crises like mad cow disease and the bird flu pandemic are reminders that global disasters are always a possibility.

The point to be made is that disasters have affected mankind from the beginning of time and there is no reason to believe that they will not continue. As disasters affect society, so, too, will they affect business, which serves society. Since disasters are a fact of life, businesses need to prepare for and develop plans on how best to deal with them. A starting point is contingency planning, which essentially prepares for a disaster based

on an analysis of what has occurred and worked in the past. As the saying goes, “those who do not learn from history are doomed to repeat it.”

The success of a company’s ability to deal with a disaster is dependent on its ability to plan in advance, the quality of its response, and its ability to learn from the situation and apply that learning to preparations for the next disaster. There were several noteworthy examples given of companies like Wal-Mart, Home Depot, and Federal Express (to name a few) who exhibited these qualities.

It was also recognized that every disaster is different and not every contingency can be anticipated—nor is every needed resource to deal with a crisis available at a given point in time. Beyond proper planning, the businesses that will best survive a disaster are those organizations that are most adept at dealing with change. As recognized in the Preface of the Pride/Hughes/Kapoor text, “no other word better describes the current business environment” than change. Disasters are but one of many events that business must deal with to achieve success. The principles and processes needed to deal with these contingencies are discussed in depth in the text.

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