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Deepwater Horizon: Lessons from the Recent BP Project Failure and Environmental Disaster in the Gulf of Mexico – Part I

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Introduction

Deepwater Horizon was an ultra-deepwater dynamically positioned, semi-submersible offshore oil drilling rig. Built in 2001 in South Korea by Hyundai Heavy Industries, the rig was commissioned by R&B Falcon, which later became part of Transocean, registered in Majuro, Marshall Islands, and leased to BP plc until 2013. In September 2009, the rig drilled the deepest oil well in history at a vertical depth of 35,050 ft (10,683 m) and measured depth of 35,055 ft (10,685 m) in the Tiber field at Keathley Canyon block 102, approximately 250 miles (400 km) southeast of Houston, in 4,132 feet (1,259 m) of water. [1]

On April 20, 2010, when drilling at the Macondo Prospect, an explosion on the rig caused by a blowout killed eleven crewmen and ignited a fireball whose flames were visible from 35 miles (56 km) away. The resulting fire could not be extinguished and, on April 22, 2010, Deepwater Horizon sank, leaving the well gushing at the sea floor and causing the largest offshore oil spill in United States history. [1]

The Deepwater Horizon oil spill (also referred to as the BP oil spill) in the Gulf of Mexico is the largest offshore spill in U.S. history. Some estimates have already placed it as among the largest oil spills in history with hundreds of millions of gallons spilled to date. The gusher is now estimated to be flowing at 35,000 to 60,000 barrels of crude oil per day. For comparison, this is an amount equal to the 1989 Exxon Valdez oil spill every one to two weeks. The resulting oil slick covers at least 2,500 square miles (6,500 km2). Scientists have also reported immense underwater plumes of oil not visible at the surface. [2]

The Deepwater Horizon accident was a Project Failure of immense proportions. The resulting environmental disaster is widely affecting life below and above the sea throughout the region, seriously damaging coastal wetlands and wildlife, and has negatively affecting fishing, tourism and many other industries in those US states

bordering the Gulf of Mexico. The lives of nearly all residents of the coastal regions of Louisiana, Mississippi, Florida and several other US states have been seriously affected. In addition, the inability of BP to stop the flow, communication blunders by BP management, negative media accounts and continuing coverage have resulted in serious negative consequences for BP, subcontractors on the project and the oil exploration industry as a whole. The US federal government has also been criticized for slow and weak response to the disaster.

While I am not an oil industry expert, and have not studied all aspects of this disaster in detail, the story is impossible to ignore by the project management profession. Some lessons have already emerged from this project disaster; other lessons will be learned over coming months and years. Some lessons are crystal clear – risk management plans were inadequate, BP was not prepared for the accident, project management mistakes were made during drilling, communication mistakes were made by BP executives following the accident (although many good decisions were also apparent), the impact on the environment and stakeholders will be far reaching, and the future of BP is at risk from this single incident. [3]

In addition, there are some other broader implications that can also now be highlighted. For example, it is clear that citizens and societies around the world are connected by earth systems (the oceans, the atmosphere, the weather); globalization is not just an economic, social and political phenomenon. Disruptive events can have far reaching affects. Emergency response and disaster recovery must be major aspects of any risk management program, and are important fields for professional project management. And if the scope of a project changes rapidly, in this case from oil drilling to stopping the oil spill to environmental cleanup, so do the range of stakeholders, now including much more directly here, the residents and government leaders of various US states; the President, agencies and Congress of the United States; top executives and shareholders of BP; other large oil companies and their respective executives, boards, shareholders, suppliers; and many others.

Organizations, projects and stakeholders around the world are being affected by this disaster. As Rohm Emmanuel, President Obama's Chief of Staff has been quoted as saying, "no disaster should go unused," I wanted to take this opportunity to discuss the Deepwater Horizon project failure and environmental disaster, from the perspective of both project management and some broader implications. So here we go.

But first, a qualifier. I sometimes get carried away in my editorials; they sometimes seem to go on forever. So I am trying to shorten things up. While the Deepwater Horizon story is long and getting longer, I have tried to summarize. Thus, this editorial is also tagged "Part I". The conditions, repercussions, lessons learned and legacy of this failed project will be long lasting. In this editorial, we just get started. So here are some early reactions to what I have seen so far.

Additional Background

It might be very helpful if you the reader can read some additional background information about the Deepwater Horizon oil rig, BP plc, deepwater drilling, the accident, the environmental impact, the gulf coast response in the USA, US government reaction and other related topics. Rather than try to describe all relevant background information or attempt to put it all in context, a set of referenced links are **provided at the end of this article**.

Photos: Deepwater Horizon oil rig enroute to Macondo Prospet (left) and in place before the blowout (right); courtesy Wikipedia

To learn about ongoing efforts to stop the flow and clean up the gulf, visit "Deepwater Horizon Response: The Official Site of the Deepwater Horizon Unified Command". [4] The BP Oil Incident Response website established by the National Oceanic and Atmospheric Agency (NOAA) also has current and useful information. [5] BP has also set up a "BP Gulf of Mexico Response" website where you can see latest information provided by the company. [6]

PM Lessons for Industry

Here are some of the immediate lessons that I think should be seriously considered, from the pre-disaster project and from the post-disaster conditions and responses.

Lessons from the Pre-Disaster Period

- **Every Project is "unique"** – This is from project management beginner course PM101, right? Yes, according to all accepted definitions of a project, each one is a unique endeavor with unique conditions and characteristics, unique cost and schedule parameters, unique end products and deliverables, etc. So why is this at the top of my list? Because it is very very important! It is this uniqueness that leads to all other aspects of project management, that require an understanding or project life cycles and planning requirements, that leads directly to the emphasis on project quality, risk, leadership and other management skills

that are often unique to project management. And there are two very important aspects of 99% of all projects that guarantee uniqueness – there are almost always new or different people on the project team, and the technology is new or different in some way. In this case, while the BP project to drill the Macondo Prospect was just another relatively deep water well, it also had some unique characteristics, including the location – Mississippi Canyon, geologic conditions, equipment history, drill design factors, electronics, drill depth, contractors, etc.

- **Generic Plans are Never Sufficient** – Building on the first point above, it is my understanding that the risk management and environmental impact planning documents used for the project were generic. For example, the potential impact on walruses was included in the plans cited by various investigators, and BP acknowledged that the plans had been prepared for other deepwater projects. This is unacceptable from a professional project management perspective. No generic safety, quality, risk or any other plans should be used for a major project without tailoring the plan to the unique conditions of the project. This is a common mistake made by many organizations, either as a cost-cutting measure or because those in charge do not understand the risks. There are ALWAYS unique conditions associated with a project that can affect the plans and activities required, and the risks. This is a point that I have had some experience with and feel strongly about. I am quite confident that this (common) mistake was made in this case.

- **Cost reduction policies can lead to bad project decisions** – According to the story over the July 3-4 weekend in The Financial Times, BP CEO Tony Hayward was committed to improving BP's safety culture when he took over the company in 2008. Over the last two years, however, there was apparently an even greater emphasis on cost cutting. [3] With regards to the Deepwater Horizon case, it was reported soon after the accident that BP has selected a less-costly design option for drilling the well (from two alternatives). During congressional testimony in June, all

executives of other large oil companies stated that they would have drilled the well differently. While not the sole reason for the blowout, taking the lowest cost design clearly does not appear to have been the best decision. Reducing people on a project, reducing salaries and overhead, reducing contract values, awarding contracts to low bidders, selecting least cost designs, and many other cost-based decisions have often proven to increase risks, lower quality, lengthen schedules and increase eventual costs on many projects. Cost should be only one factor to consider, and should never be the highest priority on a construction-related project. Safety should always be #1.

- **Design Reviews & Tradeoffs are Very Serious** – For those in the engineering and construction fields, design reviews, trade off analysis and value engineering are very serious steps in a project. Nevertheless, they are expensive and time consuming, which sometimes leads to pressure to skip important reviews, to shorten the process, or sacrifice specifications. There has also been a lot of attention in recent years on "fast track" scheduling, project acceleration via paralleling, overlapping life cycle phases, agile processes, and other attempts to "reduce time to market". Did this happen on the Deepwater Horizon project? In my opinion, it probably did. Design reviews occur for very important reasons – to bring the relevant technical and engineering expertise together to review a design, to ensure that specifications are complete and satisfied, that quality and safety can be assured, that correct outcomes can be achieved, to find mistakes, and to raise and discuss questions. Eliminating or reducing any of these activities greatly increases the risk of failure.

- **Environmental Protection is becoming more important** – Whereas the American public has been deeply divided in recent years regarding climate change and the environment, the Deepwater Horizon oil spill and its environmental impact on the Gulf of Mexico has singly changed attitudes. The Exxon Valdez oil spill in Alaska in 1989 shocked the country, but the public remained supportive of Exxon, the oil industry and trans-shipments of oil and gas. This disaster is many time bigger and more serious than the Valdez accident; public reaction is also dramatically greater.

It should now be clear to everyone that oil is dirty; when released in any form onto the ground or into water, there are serious negative consequences. While the tradeoff between cheaper products (oil, chemicals, plastics, etc.) remain, attention to environmental protection will now increase. Every company with a project involving any dangerous or dirty chemical or substance must take environmental protection planning more seriously. Every project must have an

environmental and health protection plan, even if the only dirty substance is fuel for energy (or to drive trucks, ships, air transport, offices). Sustainability and environmental protection have just become bigger and more important elements of the PMBOK. The project management field should take note.

- **Risk management is Critical** – Risk management has always been as important aspect of project planning and management. Risk management has been a major element of PMI's Guide to the Project Management Body of Knowledge (PMBOK) for many years now. But how many program and project managers really understand and practice good risk management. Was the risk management plan for the Deepwater Horizon project just the company's standard procedure, or did it really address the engineering, technological, geographic, economic, organizational, contractual, human and other risks associated with this particular project? Did it include an assessment of the blowout preventer that eventually failed, the low cost design, the contractor conflicts, the communication issues between the platform and Houston, the age and experience of the platform itself? Did it identify stakeholders, concerns and repercussions if something went wrong? Did it include an emergency response plan for the Gulf of Mexico? Did it envision people dying? For some types of projects, the risk management analysis might be the single most critical planning required. This is easy to see in hindsight for this project. Unfortunately, I have seen risk management either dismissed or given inadequate attention on many programs and projects. In too many cases, there are project disasters waiting to happen.

- **Planning for Disruptive Events can also be Critical** – In my opinion, it was only a matter of time for this kind of accident to occur. An accident, and certainly any disaster, can be considered as a disruptive event. After a disruptive event, anything and everything can change, with serious repercussions. In my opinion, and as described in my September 2009 PM World Today editorial [7], many disruptive events can be both predicted and planned for. This should be a major element of the risk planning associated with major programs and projects. And disruptive events can have unexpected and significant consequences – in this case, enormous impact on the environment, BP market valuation, BP's public image and credibility, many other BP projects and people, public perception of both BP and the oil industry itself, and possibly BP survival. Now shouldn't those possibilities have been planned for? How many project managers are considering the consequences of a similar disruptive event, or even project disaster?

- **Some Project Failures can Kill the Enterprise** – There is now serious debate as to whether the Deepwater Horizon incident will lead to bankruptcy for BP. Obviously, the repercussions are greater for some project failures than others. But in this case, not only will BP be faced with paying for all environmental and economic damages from the blowout, but will also face years of claims, negotiations and litigation. In all likelihood, BP will begin to sell off assets to raise cash. Due to the pending lawsuits, it is unlikely that BP will be acquired by another firm.

Therefore, it will most likely get smaller. Whether it will survive is uncertain. But this lesson is clear – project failures such as the Deepwater Horizon can have enormous consequences on the value of the owner, and may even jeopardize survival of the enterprise. For BP shareholders, including many pensioners in the UK and current and past BP employees, this is a huge shock.

Lessons for the Post Disaster Period

- **From Project to Program: A Disaster can Immediately Transform a Project into something Different** – One of the most significant lessons that I learned from studying Apollo 13 was the following: Shortly after the accident in the Apollo 13 capsule, when it became apparent that there would not be enough oxygen for the astronauts to survive, the program manager at mission control in Houston said, "listen up everyone. The mission for this program has just changed. We're not trying to land on the moon anymore. The mission is to bring them home alive!" This changed everything immediately – scope, objectives, technologies and resources needed, stakeholders, schedule and budget.

The same thing has happened for BP with Deepwater Horizon, but even more dramatically. It went from an oil exploration "project" to a massive program with portfolios of projects related to dealing with the families of those killed on the oil rig, stopping the oil leak (drilling relief wells and other 'options'), capturing the oil (both from the well and from the sea), cleaning the environment (seashores, wetlands, Gulf of Mexico), saving and cleaning wildlife (underwater and on shores), responding to human needs (fishermen, secondary impacts, families), dealing with the public (PR campaigns in USA, UK and worldwide), dealing with shareholders and employees, dealing with governments (state and federal), working with other agencies and organizations.

The mission and scope have not only changed but grown significantly; it's no longer a $500 million oil prospect development project but potentially a $100 billion program with global reach and hundreds of projects. BP's need for program and project management expertise has just skyrocketed, whether they realize it or not.

- **Stakeholders Change Dramatically** – Building on the theme in the previous paragraph, the number and range of stakeholders and stakeholder issues has also changed and expanded. Prior to the accident, primary project stakeholders were those directly involved with the project, BP management and employees, and BP shareholders. After the disaster, while workers, employees and

shareholders remain important stakeholders, BP suddenly found government officials, citizens of US states bordering the Gulf of Mexico, the American public, the American media, and even the US congress and the president of the United States as primary stakeholders.

➢ **Communications with Stakeholders are Critical** – Stakeholder communications is a major aspect of managing any disaster, and especially this one. This, of course, raises the whole issue of project stakeholder management planning; had BP even considered stakeholder matters so seriously before this disaster occurred? How will they change policies on other major projects? Do BP's public relations and legal departments really understand stakeholder management issues like we do, or are they just engaged in "spin" and legal "protection" strategies? And how is BP communicating with their shareholders in the UK and elsewhere, those who have just seen the value of their BP shares reduced by half?

➢ **Stopping the Flow is also Critical** – Of course, it is even more important that the flow of oil from the well be stopped, or the ecological and economic disasters will grow, along with BP's long term liability. Why hasn't anything worked yet? Will the relief wells be successful? Why doesn't any other oil company in the world have the knowledge, expertise or experience to cap a blown well under 5,000 feet of water, when hundreds if not thousands of such wells have been drilled? Is this really rocket science? There has already been a lot of debate about whether there should be a moratorium on deep water oil drilling now, due to the impact of this disaster and the perceived risks.

But there is another aspect to consider, in my opinion, and another parallel. The nuclear energy industry has taken great steps to protect the public from radioactive leaks and accidents. The protective coverings for nuclear reactors are massive, with multiple redundant safety systems. If the blowout of an oil well can create such massive and negative environmental, economic and social affects, should such projects also require similar safeguards?

Since the environmental impact of a blowout underwater can be so much greater, with the blowout so much more difficult to stop, then the safeguards should also be greater. I think the oil industry can expect much greater regulations, and much higher costs for developing future offshore oil and gas wells.

➢ **Legal and PR Tradeoffs become Extremely Difficult** – Who should BP executives listen to most, the public relations (PR) department and experts, or the legal department? Immediately after the accident, it seems that Tony Hayward was

rightly listening to PR advisors, becoming the voice of BP and communicating well, with the public and various government officials. Unfortunately, after a few mistakes, the legal department stepped in to try to minimize liability. When he testified about the disaster before the US Congress, Mr. Hayward deferred may answers to "the ongoing investigation", giving the image of someone avoiding answers and following a defensive legal strategy. BP's image in the US media and public declined further. There is no question that Mr. Hayward had a very difficult job, and that any mistakes could be amplified. This is exactly what happened. Personally, I think he was generally making good decisions and doing the right things, especially in the days immediately after the blowout. However, the task was too big and too difficult. Other executives and organizations should not underestimate the challenges of dealing with such enormous disasters. And the tradeoff between PR and legal discretion is an extreme challenge. Nevertheless, I believe that honesty and transparency generally pay dividends in the long run.

- **Time Speeds Up** – One of the most important reasons for greater pre-planning for accidents, disasters and disaster recovery is that time speed up. There are so many pressing needs after a major disaster that there is simply no time for planning. Executives and organizations must be prepared, or they will fail to keep up with demands. This is true for governments as well, as we have seen in the aftermath of various hurricanes and other natural disasters in North and South America in recent years. After a disaster, lives can depend on responsiveness. In the Gulf, every day lost meant more environmental damage; every delay in approving ships for collecting oil compounded the problems; delayed payments of claims meant lives hurt and bad press for everyone involved. BP may yet win recognition for immediately starting the two relief wells, which may turn out to be the only way to stop the oil. But there are also consequences of working fast; mistakes can be made if there are not plans. For example, various attempts to cap the well have already failed. What went wrong with those "projects"?

- **Planning becomes even more Important** – As already mentioned numerous times, planning is even more important during a crisis. Such projects are similar in nature to a turnaround project, where every minute is critical. Turnaround projects are often planned for months in advance, scheduled in minutes, with a well defined critical path constantly monitored, and everyone prepared in advance for everything they need to do. Disaster Response and Recovery Plans should be prepared with a similar mindset. I suggest that a program, portfolio and project management approach be used for disaster planning, to simplify the categorization, organization and planning of all that must occur. Without plans, time and lives will be lost, there can be little doubt.

- **Leadership become more Critical** – Leadership is now widely recognized as one of the most important skills for effective project management. This is even more true in crisis situations, and for emergency and disaster response programs. These types of projects, however, are extremely intense, so leaders must be

prepared. Plans are not enough; the people who will be leading disaster responses must have both technical and leadership training. I think Tony Hayward will attest to that. In the case of the Deepwater Horizon, the US Coast Guard may have been the best prepared for such an emergency – but not for the environmental disaster that followed.

- **Transparency means credibility** – Just to re-emphasize the point about transparency. Just as transparency can lead to better accountability, it also leads to believability and credibility. If an executive is open and honest, and the public and other stakeholders can see for themselves that there is open and honest information being provided, credibility skyrockets. In addition, leadership is reinforced. This can be very difficult, especially if one's organization is liable for damages as appears to be the case with BP. Nevertheless, I am sure that lesson will be amplified when the Deepwater Horizon story is fully told.

Lessons for Government Agencies

Many of the lessons and points mentioned above can be useful for governmental bodies and leaders as well. Generally, however, lessons for governments from the Deepwater Horizon disaster fall into two broad areas: pre-disaster regulatory lessons and post-disaster response issues. Here are just a few points.

Pre-Disaster Regulatory Lessons

- **Regulators and those regulated are not "Partners"** – Roles and responsibilities should always be clearly understood. The responsibility of regulating agencies is to regulate, not befriend those being regulated. This does not mean there must be conflict, and "win-win" opportunities should still be pursued. This problem is also faced by supervisor-employee relations, and between contractors or contractor-subcontractor. For governmental agencies, however, their mission is clear – to represent the best interests of the government and the citizens, not the interests of the industry or organizations being regulated.

- **Some projects are dirtier than others** – Some projects, organizations and industries deal with dangerous, risky or "dirty" materials by their very nature. They require stricter rules, more oversight and more serious repercussions for violations than others. It is now clear that off-shore oil drilling, and deep water exploration in particular, will now face both stricter regulations and more oversight. The trick is to get it right – the right regulations, to the right degree, with qualified people involved, and with continuous feedback and improvement, of processes and results.

➢ **Better Disaster Response plans and preparation are needed** – This cannot be emphasized enough. The time for planning is before disasters occur, when time is available and demands less pressing. How many disasters will it take before every city, state and national government understands that each one needs an emergency/disaster response and recovery plan, with associated organizing, training and outreach? There should also be such plans and coordination at international levels, and especially between and among bordering nations.

Post-Disaster Lessons

➢ **Time is not a luxury** – Whether prepared or not, governments must respond immediately to disasters. While the Obama administration seems to have responded faster than the Bush team did after Katrina, they still seemed to wait too long to make decisions and take action. Time is not a luxury. Lives can depend on fast decisions and timely actions. Obama quickly sent Dr. Stephen Chu, US Secretary of Energy, to Houston to meet with BP executives and to monitor the situation. However, where was FEMA (Federal Emergency Management Agency)? A 'war room' should have been established at FEMA headquarters where a team of high level representatives from other government agencies could gather, assume responsibilities and take action. I heard about the joint response team weeks after the blowout. This should have all been in "The Plan"!

➢ **Responsiveness means moving decision makers to the disaster** – After several weeks of monitoring the situation from the White House, and relying on responsible lower level agencies and officials to take actions, US President Obama finally realized that he needed to visit Louisiana and Mississippi to order to show the public that he was on top of things. It was almost too late! Top executives and leaders must show up immediately, to show they care and to assume responsibility. This is what all stakeholders in a disaster want and expect, from both government and industry. BP management understood this well; BP's CEO Tony Hayward was on-site and highly visible shortly after the Deepwater Horizon oil rig sank. This was exactly right. Leaders must be seen to reassure the public and to ensure that all necessary actions are taken by those assigned. This too should also be a main point in a "Disaster Project Management 101" course.

➢ **Governments should show more human characteristics** – Government officials should not be seen as bureaucrats during a crisis. Those who are suffering from a disaster have all too human features – injured children, distraught parents and families, lives and jobs destroyed, homes ruined, livelihoods affected, and, in this case, environments devastated. Government officials need to walk among the people, react with heartfelt sincerity, show human emotions, and speak in clear and common terms. No speaking down to victims, as BP Chairman Carl-Henric Svanberge did on June 16 upon leaving the White House, when he said that "BP cares about the 'small people'". The 'small people' in Louisiana did not like that comment, nor did the American public.

➢ **Timely Communication to Those Affected is also critical** – I think it is clear to everyone reading this that communications are critical in a crisis. This disaster has again highlighted the need for good communications to those affected. But communications, like other disaster response actions, seldom occurs will without affective planning. In addition, communications during disaster response and recovery periods must be correct and well delivered. There is good reason why disaster communications is a growing field of expertise in the PR industry. Communication plans must be important elements of every Disaster Response and Recovery Plan. There should also be some professional resources available to help.

➢ **A Crisis Tests Leadership** – Like nothing else, a crisis test leaders, both private and public. The Deepwater Horizon disaster has again demonstrated why – crises can be overwhelming, in terms of the wide range of actions and decisions needed, the importance of those actions and decisions, the emotions of those involved, time pressures, and potential consequences. Tony Hayward appeared to crack, and was relieved of day-to-day responsibility for BP in the Gulf (assigned in late June to Bob Dudley, BP Director for Americas and Asia). President Obama still appears calm and in control; other government officials are somewhere in between. The lesson here is that government and industry officials should expect disasters to both test their leadership abilities as well as put great strain on their positions and careers. These are very difficult and painful experiences for many leaders.

Broader Lessons

This is also an opportunity to revisit some broad topics previously addressed in ***PM World Today*** editorials. These are themes that I think are also relevant here.

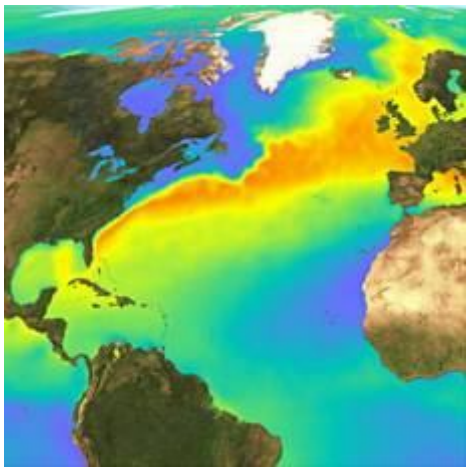
➢ **Disruptive Events: Project Disasters can have widespread consequences** – As discussed in detail in my September 2009 editorial entitled "Disruptive Events! Are you, your project or your organization prepared?", disruptive events might be much more predictable than most people (including project and program managers) realize. In my opinion, the Deepwater Horizon disaster is a good example. It seems to me that this was a disaster waiting to happen – the nature of deepwater drilling suggested to me that it was just a matter of time before there was a major blowout, an oil rig is hit head on by a category 5 hurricane, or some other accident resulted in something similar. Maybe I am wrong, but in hind sight, I don't think so. I encourage readers to revisit my September 2009 editorial. [7]

➢ **Disaster Preparedness: Disasters can have profound Repercussions** – In September 2007, we called for more attention to "Emergency Response and Disaster Recovery" in this journal. [8] This has been emphasized numerous times in the paragraphs above. But I can see the need for ERPM (emergency response project management) interest groups, a body of knowledge, training courses, conferences and more research in this field. FEMA and other national and regional

emergency response organizations must become more visible; disaster response planning and preparation must be budgeted and implemented more frequently; while volunteers are important, governments are responsible.

- **Basic Human Needs: Social needs revert to the basics in a disaster** – In November 2009, the ***PM World Today*** editorial focused on the need for more projects and project management in such sectors as food supply, drinking water, housing/shelter, medicine and healthcare, jobs, family health and others basic human services. [9] While these are big issues in developing economies, especially those with rapidly growing populations, they become huge aspects of disaster response and recovery. Whether related to natural disasters due to extreme weather, or man-made catastrophes like the Deepwater Horizon oil spill, basic human services must be major elements of response plans and actions. These should also receive the highest visibility. The responses in the southern US states following this disaster seem to be better than they were for Hurricane Katrina, but not without criticism.

- **Earth Systems: we are all connected** – Globalization doesn't just refer to communications, investment, trade and other economic activities any more. We are all connected socially and politically, and for solving global problems. Perhaps more importantly, and relative to the Deepwater Horizon disaster, we are all connected by climate, weather, oceans and other "earth systems." As pointed out in my July 2008 editorial [10], earth systems represent a "new frontier" for projects and project management. As our interconnectedness becomes more apparent, more investment will be made into studying, understanding, preserving and managing the planet.



In the Gulf of Mexico, we are rapidly learning how the currents, tides and life of the sea affects those living in and around the Gulf who are affected by the oil spill. But how far will the oil travel? What beaches, sea life, industries and lives will be affected in distant places from this one project disaster. Now it seems that the Gulf Stream might take the oil to Northern Europe. What a disaster? We need to care for our planet together.

- **Future Energy: we must end reliance on Fossil Fuels –** Maybe this is the most obvious reaction. Isn't it time to get more serious about weaning American and Western economies off fossil fuels? Maybe it will be painful, but it seems to me that European countries are well down this road. As discussed in my May 2008 editorial on the subject of "*New Frontiers for Project Management: Future Energy*" [11], we need to focus both more investment and research into alternative sources of energy. In my opinion, the greatest hope lies with science, nanotechnology and

yet-to-be-announced fundamental breakthroughs. It will happen; it's just a matter of time and commitment now. The Gulf Oil Spill of 2010 demonstrates once again why this needs to occur. The oil that took the earth millions of years to create is being mined and burned in less than 200 years; we are beginning to feel the consequences.

- **Continuous Learning: still needed on many fronts –** If we know so much about projects and project management, why can't the best engineers, scientists and technologists in America fix the BP blowout and clean up the mess faster? The fact is, this project disaster introduced some new issues and problems, some things that project managers have never confronted before. This all reinforces the main points of the February 2010 editorial in this journal on the subject of the need for continuous learning. [12] It is literally impossible for someone to learn everything from experience; there will always be new types of projects and programs, new project conditions, unexpected and disruptive events, new challenges and new lessons to learn. We must also learn from each other. The Deepwater Horizon project disaster will provide education for thousands of project and program managers around the world for decades to come. We should never think that we know it all; there is always more to learn.

- **Project Management as a National Competence** – As discussed in March 2009, "As more government agencies implement PM, more programs and projects funded with public monies should be more successful, accomplished in less time and for less money than otherwise." [13] What better test for a nation's program and project management capabilities, and maturity, than a national disaster like the Gulf Oil Spill? It seems clear to me that the United States is not there yet. While some agencies such as the US Coast Guard and NOAA have responded well, the government as a whole has not, especially in the first month. There are many improvements still needed; there were many steps in the response to the oil mess in the Gulf of Mexico that could have been performed more quickly and better. (the mobilization of more giant oil skimming ships could have occurred much sooner, for example). Most importantly, the country was still not prepared for a large disaster response program. This is a lesson for all nations. Disaster response projects should provide the very best display of a nations project management competence.

Conclusion

What a name for a project disaster – "Deepwater Horizon"! Clearly the lessons learned from this deep water disaster will have deep and serious meaning for many people and organizations for many years to come. The companies involved are at serious financial risk; their executives are unlikely to survive in their current positions. It is possible that this single event and its aftermath could lead to bankruptcy for BP plc, one of Britain's largest and previously most respected companies.

And on the horizon, we should all begin to see the repercussions – to BP, other oil companies (throughout the supply chain), the Oil industry, offshore drilling worldwide, energy and fuel supplies, and to government regulators and officials, in every US state with a seashore and in Washington, DC. The public in the USA is rapidly turning against big oil, against offshore drilling and against carbon based fuels. In my opinion, this single event will lead to a wholesale shift in American public opinion and federal energy strategy away from oil and gas, much more rapidly than previously thought possible (even by the most optimistic environmentalists). Like it or not, big oil is now in the same tent with big tobacco and big banks (Wall Street, City of London).

The lessons to be learned from the Deepwater Horizon project disaster and the Gulf Oil Spill of 2010 are just emerging. There will be many more in the weeks and months ahead. Will the oil reach the Gulf Stream and eventually wash up on European shores? Will the new dead zones, where oxygen has been depleted, recover in the near future? Will BP survive? Will these events have lasting effects on the US economy or the Gulf of Mexico? I have tried to raise some issues that might apply to project management in this article, but it is only a start.

If you have a comment or reaction to this article, or other lessons to suggest, please let me know.

Good luck with your projects!

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For Additional Reading – Background Information:

- http://www.deepwaterhorizonresponse.com/go/site/2931/
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