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To: Boston Strategies International's Clients

From: Christopher Chand

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Re: Autopsy of the Deepwater Horizon Blow-Out

The explosion at Deepwater Horizon has resulted in the loss of 11 lives, over $750 million already spent for cleanup, and forecasts of total costs reaching as much as $12 billion.

Understanding the causes of such a disaster can prevent future accidents. While details on the incident are still emerging, five parties appear to have played some role in the accident. **Cameron** manufactured the blow-out preventer (BOP) that did not activate, **Halliburton** laid the cement plugs in the well that yielded under pressure, **Transocean** owned and operated the drilling rig, **BP** oversaw the project, and the **US Minerals Management Service** was responsible for monitoring the risks of such deepwater drilling.

BP acted as the general contractor on the project. Having leased Transocean's equipment to drill its well, BP planned how the well would be drilled to how it would be cemented. A BP manager appears to have asked the drillers to speed up their efforts to make up for lost time, ultimately damaging the rock structure and forcing Transocean to start again. BP also instructed Transocean to remove drilling mud during the final cementing, despite Transocean's objections, to save time, and it skipped a time-consuming cement log test that would have determined if there were any weaknesses in the cement. Additionally, BP typically does not test BOP emergency systems once under water, and kept working when the well failed a pressure test.

The **US Minerals Management Service (MMS)** indirectly played a role by overlooking its own scientists' warnings of environmental danger and giving waivers for legally required environmental impact tests. This issue is not specific to the Deepwater Horizon disaster, and the MMS has also given such waivers to ExxonMobil, Shell, Chevron, and others. In some cases it appears to have awarded permission to drill before it received legally required environmental permits from other government agencies, and it seems to have given the responsibility of monitoring marine life to oil companies, which led to a conflict of interest.

Transocean modified the BOP on the well – so much so that the drawings Transocean supplied no longer match what is on the seabed. Moreover, Transocean did not investigate possible damage to the annular preventer following an accident prior to the blowout. Transocean may also not have sufficiently maintained the

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batteries on the BOP back-up systems. However, it did categorize possible failure modes on the BOP – 260 of them – in an effort to determine potential problems and take steps to minimize or eliminate them.

Cameron sold the BOP to Transocean 10 years ago (it was past its warranty period when the accident occurred). **Halliburton** claims that it followed the cementing procedures exactly as BP specified.

The Deepwater Horizon disaster exemplifies the need for best-in-class supply chain management in the oil and gas business. Starting with a thorough and intimate knowledge of the market for suppliers of equipment and services, best-in-class supply chain management extends to the purchase, receipt, inspection, testing, installation, servicing, and continuous monitoring of equipment and supplier performance. Suppliers and oil companies alike should study the multiple causes of this accident and conduct an independent and objective assessment of their supply chains to ensure that another such disaster never takes place.