

## All.Net Analyst Report and Newsletter

### Welcome to our Analyst Report and Newsletter

#### **As the consequences rise, where is the risk management?**

In the last week, two events in particular seem like canaries in the mine shaft. The massive power failure in India involved some 600M+ people, 300M without power for 8 hours or more. The Knight Capital debacle brought the most aggressive computer trading operation to its knees, losing half the shareholder value in an hour of computerized erroneous trading. The number and magnitude of computer controlled system consequences seems to be rising, and thus the risks seem to be going up at an alarming rate. How can this be?

#### **How can risks rise so quickly?**

Risk management is, fundamentally, a predictive art. People make bets on their perceptions of event sequences and outcomes, and the better betters do better. Except of course that this is not quite true. In fact, risk management is a sequential game, with the history of events in sequence leading to the changing state of the world. Knight was so successful, ultimately, because they took risks. When they had little, they had little to lose, but as they grew, they failed to become more conservative. Eventually, you get nailed – that's just how risk is. The risks didn't rise so quickly, but the perception of risk failed to rise as the actual risks rose, and the net effect was that when it went bad it went very bad indeed. It's the same with India's power outage – even if we don't yet know the actual cause yet. The aggregation of risks grew over time, and the compensating controls weren't changed as the risks grew, because they didn't become more conservative about risks as the power infrastructure grew and integrated.

#### **And it will happen more and more**

The sad but true thing to know about risk is that, because of its sequential nature, those who take bigger risks in a competitive field, either fail early or grow faster. If they fail early, we don't usually hear much about them. They might get bought out by a company that is growing and that then grows faster. Those who are more conservative about risks early on, tend to spend too much to protect too little, cannot grow as fast, and fall behind. As the game goes on, those who take the risks start to but the losers of the risk game and, depending on circumstances, may even buy some of their larger competitors. They become so big so fast, that they win the market. But in many cases, they also fail to address the changing risk profile, and put off the move to conservative principles again and again – because they haven't been burned yet.

#### **When to control risks and to what level**

The strategic question, and the cause of the strategic blunders we see in increasing clarity, largely surrounds the decision of when to make the change between major modalities of protection. Experience shows that, with expert assistance, decisions should be made at each of 4 different stages of growth for a typical business (utilities are generally treated differently based on populations served); the move from

(1) micro-business to small business (\$2M-\$5M/y, 20+ employees) - a minimal annual review is usually adequate.

(2) small to medium (~\$25M, 250 employees) – an external review every few years and internal review annually is a minimal necessity for long-term survival.

(3) medium to large (\$100M, 2000 employees) – standardized processes should be in place with a sophisticated risk management program. Annual external reviews are prudent with a changing review team over time.

(4) large to enterprise (\$1B or 10000 employees) – a complete and mature protection program should be in place with differentiated risk management practices standardized for different business components, and professionally operated. External research and advisory services should be in place, dedicated staff should be present as a part of the top-level management process, and cultural norms should embed risk-related activities throughout the company.

### **Of course, there is a lot more to it**

One of the reasons we advise outside expertise and research and advisory services is that the risk management field is quite complex and must adapt to meet changes in environment if it is to be successful. Real expertise is called for, and careful attention to realistic risk profiles and human judgment are required. Judgement stems from experience across a range of situations, and that is yet another reason for external, top flight review, especially as the size of the consequences grow.

Returning to 600M people out of power for a day and \$400M losses in an hour, it seems clear that reasonable and prudent risk management should, by definition, have avoided these consequences. But it's not hindsight that's at issue here. It's the ongoing study in hindsight and recognition of the many myriad causes of such spectacular failures that we need to do has a field, and attention to the past as the best predictor of the future we must consider. IT seems almost certain that the events that took place were not unique, had happened before at smaller scales, and that it wasn't knowledgeable and prudent management practices that were behind these examples and so many more. Everyone in management we talk to claims to be diligent and demonstrates that in the areas they understand. But we have too little sound advice, too few professionals who study the field they work in, and too little attention to the issues by those who supervise them, not realizing their limitations.

### **Where does the World go from here?**

This we have been railing for for years. Education, professionalism, constant attention to the changing nature of situations, practice outside of the isolation of the company, and high-level visibility into key management decisions is a necessary component for successful risk management, especially as we get into larger and larger consequences dependent on more and more complex systems. But this is not the end of the story – it is only the beginning.

As we strive to move forward and do everything better, faster, and cheaper, we forget the old things that worked, replacing them with new things that don't, but seem to for a time. Systems making high-valued decisions, real-time controls over hazardous mechanisms, weapons and explosives, and other things that modern society depend on are integrated with the weak computer mechanisms of the general purpose toy computers that are popular among consumers, as if we could really replace serious engineering with toys. We must stop the foolishness and return to an engineering culture for high risk situations, or suffer the result.