BACKSTOP SOLUTIONS

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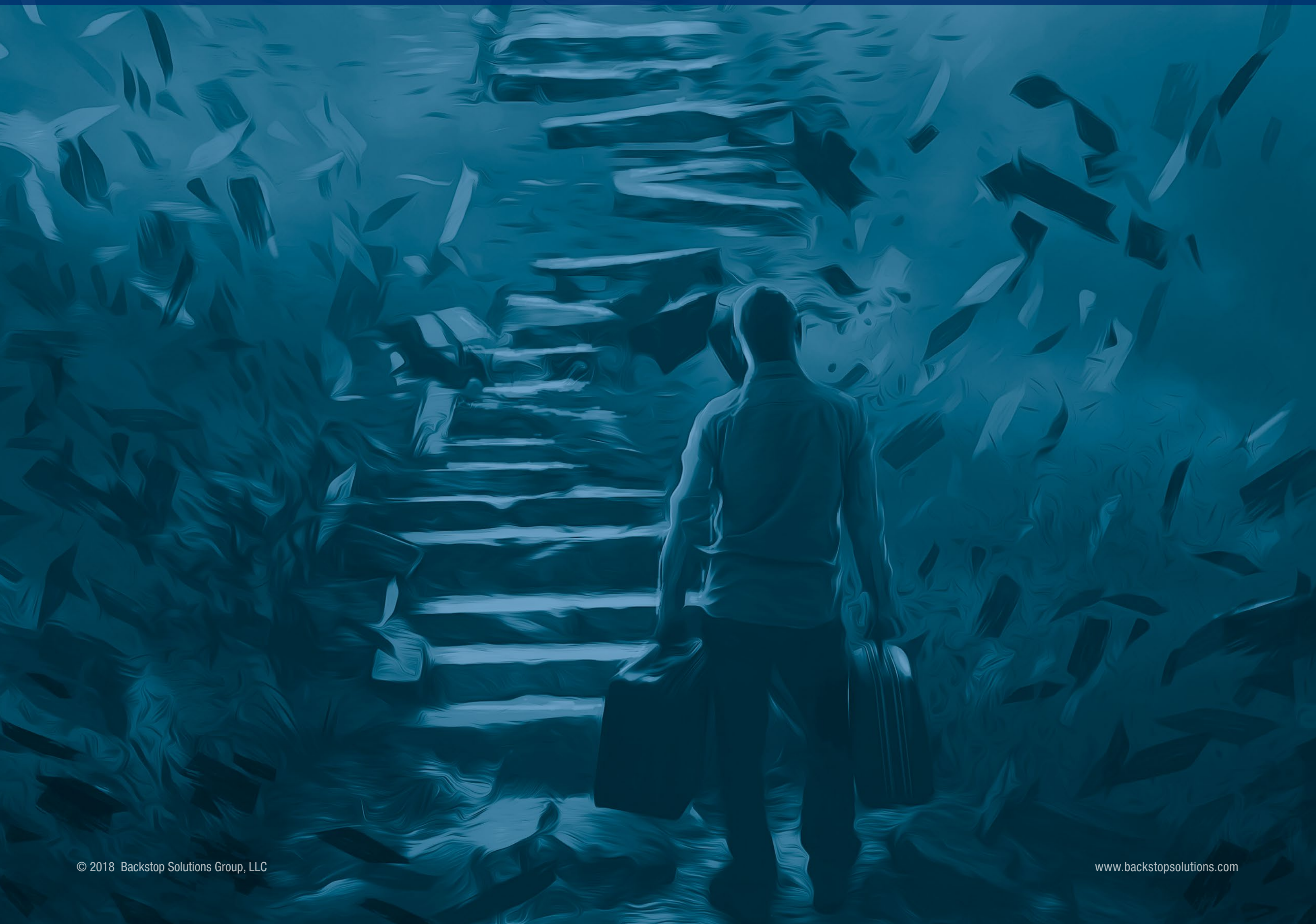
WHITE PAPER

THE SUM OF ALL FEARS — THE INSTITUTIONAL INVESTOR EDITION

BY KEN AKOUNDI & CLINT COGHILL



> *History rarely repeats itself,*
> *but its echoes never go away.*
> *– Tariq Ali*
>
> *History repeats itself.*
> *So, you might wanna pay attention.*
> *– Quavo*

Investment offices often engage in a theoretical exercise around scenarios that could hurt their portfolios. Often these exercises, or stress tests, focus on probable hypotheticals: what if the 10-year rates went above 3%? What if inflation or oil prices spiked? Sometimes, these investment offices are equipped with the technology needed to measure the portfolio impact of each scenario.

Less common, however, is any attention paid to the impact of operational scenarios. For example, what if a manager shuts down? What if their assets are hypothecated?

Rarely are all the scenarios played out in concert to assess the impact/losses to the entire organization. We all know from a large sample of once-in-a-lifetime events that disasters don't occur singularly like a hurricane, but hit the markets simultaneously, mercilessly, and indiscriminately.

Long-term investment offices often have a great ability to quickly forget negative experiences. One of the authors knows of a CIO who was down 26% amidst the financial crisis and lamenting that he had not implemented the proper risk technology. Six months later, when his portfolio had somewhat recovered, was back to complaining about the risk system being too expensive (approximately 50 basis points per annum at the time).

A crisis without lessons is wasted. Scenarios, at least those that haven't happened, must be applied to the entire organization with the goal of identifying the ways that undue loss could have been prevented. It is with that premise that we have prepared the following course of "doomsday" events: that we can identify where loss could have been prevented.

A SERIES OF UNFORTUNATE EVENTS

JULY 2

As the CIO of a multibillion dollar pool of capital, you walk into your office, focused on wrapping things up before the long weekend. Next week, you'll continue preparing for your Fiscal Year-End Board Presentation on July 16th.

The first event comes without fanfare: the three members of your Absolute Return team enter your office and resign, giving you two weeks to organize an orderly transfer. You cancel your lunch, citing too much work before the holiday.

After consulting with your senior team, you call a staff meeting. You delegate their responsibilities to other staff. You are aware that the team's corporate knowledge is spread across local drives, shared drives, Dropbox, desktops, email inboxes, printed files, and – of course – the heads of the three people leaving you.

JULY 9

The week passes by all too quickly, but you're feeling pretty positive despite the hit to your staff and the difficulties that has caused. As usual, the office is filled with the mayhem that leads up to a Board Meeting.

JULY 16

When you hold the Annual Board Meeting, you announce that the search for a new Absolute Return team is underway, and that portfolio performance looks promising, as of the end of Fiscal Year. The meeting goes without a glitch. You feel great that your team has contributed Alpha to the portfolio and that you are in-line (if not slightly ahead of) with your peers' whisper numbers.

JULY 21

You wake up to a tanking Futures Market. A quick scan of Bloomberg Anywhere provides an explanation: overnight, Hezbollah launched attacks on Israeli targets, from Jerusalem to Beirut. Iran, Syria, Turkey, and Russia have sided with Hezbollah. Saudi Arabia, Ukraine, Pakistan, Egypt, the United States, and Jordan have sided with Israel. In the premarket, oil is 120/bbl and rising, 10-year rates have spiked past 3%, and equity markets are already down 3%. Everyone in the office is clamoring for facts, as well as for potential impacts to the portfolio.

JULY 31

Rumors begin to circulate that one of the managers in your portfolio has incurred massive losses in oil and Italian treasuries and is seeing sizable redemptions as a result. You direct your "enlisted" Absolute Return team to contact the Investor Relations team of the manager. You also request a status report on your entire portfolio from your now-further-short-staffed team. You are aware that it will take time to prepare — longer than you have.

AUGUST 2

The "substitute" Absolute Return team breaks the news: the manager's Investor Relations team is slow responding to emails, and won't commit to an immediate update call. The mid-month estimates look bad, and no indication is given on the size of total redemptions. Worse than that, they have reviewed the due diligence reports on the manager — and found that half the steps were either missing, not completed, or poorly documented.

AUGUST 3

The Absolute Return team finally connects with the Investor Relations team of the manager in question. The conversation is cryptic and unsettling. You decide to pre-emptively place a 100% redemption notice for the manager. Your legal team scrambles to determine the liquidity terms by unsuccessfully searching for signed sub docs and the specific offering documents in inboxes, shared drives, and individual file folders. Unsigned versions are found in multiple copies, but which one is effective? Your chief legal counsel would be happy even with unsigned "final versions." You task two analysts with estimating how long it will take to redeem all your capital. They ask for a week to run the analysis.

AUGUST 7

The portfolio report finally arrives on your desk. It shows that your portfolio is down 3% for the year, even though you reported positive Fiscal Year-end numbers, in line with the reported whisper numbers of your peers. But the July return numbers haven't been updated yet, so you suspect that the truth is worse than that. The liquidity report indicates that it will take 12 months until you receive your last dollar from the troubled manager…at least.

The July numbers, however, take second place when an analyst appears at your office door, white-faced with apprehension. In her new Absolute Return role, she has discovered an error in the exposure reporting calculations in your complex spreadsheets that calculate it. She has traced the error back to changes made in October 2012, when hedge funds were first added to the portfolio. Worst yet, more errors have been introduced as hard-coded numbers were not updated. You are annoyed, but relieved that the uncovered miscalculation does not affect this year's portfolio return.

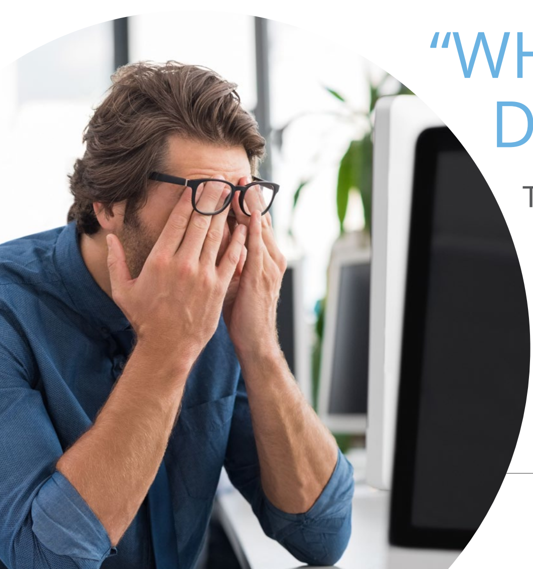
AUGUST 8

You call an emergency Board Meeting. You haven't had the usual 3 weeks to produce the Board package, so the meeting runs with a lot of numbers off of spreadsheets. At the meeting, the Board is not sure what to think. They want answers to a thousand questions, but you don't have any concrete data to give them. You can sense the anguish in the air. You choose not to disclose or discuss the spreadsheet miscalculations.

Your investment team is sweating at their desks to try to get the actual numbers. A frantic week passes by until the July numbers, from your largest or most volatile allocations, finally roll in. Your portfolio is down a colossal 5.8%. The corrected spreadsheets indicate that your exposure to oil is 2.5x larger than your compliance limit. With now-corrected exposures, with oil experiencing tremendous volatility in the global market, you estimate that your losses would have been 4.8%, if the oil exposure had been identified and corrected. You share the information with the Investment Committee.

SEPT 5

You hold another emergency Board conference call. There is absolute silence as you report the new numbers. Estimates indicate the likelihood of an even further decline. The specter of being in breach of fiduciary responsibility looms. One board member finally asks, ***"What could you have done better?"***



"WHAT COULD YOU HAVE DONE BETTER?"

This is an excellent question. Hopefully these particular scenarios have had a reflective impact. Could this course of events happen to you? How would your investment office react?

The truth is, your investment officers likely have their own favorite scenarios in mind and have put their own asset classes through the thought exercise, hopefully assisted by whatever systems they have been allowed to acquire.

Whatever your favorite doomsday scenario, there are a number of measures you can take to react faster, with knowledge. It all comes down to technology.

1. STOP RELYING ON EXCEL FOR EVERYTHING

100% of firms use Excel to accomplish various tasks in their office. And that's well and good — if the task is appropriate for the tool. The problem comes when Excel (or any other technology tool) is relied upon to deliver more than it was designed to do.

For example, Excel should not be used to:

- Manipulate and normalize incoming data
- Automate workflow decision processes
- Provide an audit trail on the numbers that are entered and changed
- Calculate linear and non-linear analytics that are stored as history
- Alert you of potential problems within the portfolio
- Supply you with a history of changes in a file
- Generate reports on demand that require recalculation across data silos

2. RETAIN CORPORATE KNOWLEDGE, RELIGIOUSLY

As your staff churns, all their institutional knowledge churns with them, including their intimate knowledge of the spreadsheets they used, their working processes, and the relationships they've developed with managers.

Technology exists today that can systematically capture and store business-critical knowledge, tagging and filing it so it can be readily accessed as needed. By creating a single source of truth that includes the institutional knowledge of key personnel, you protect yourself against the loss of staff.

3. PERFORM DUE DILIGENCE, SYSTEMATICALLY

While the tools to quantify operational risk do not exist, there is one surefire way to minimize it: a systemized workflow. Often, the existing workflows look robust on paper, but are not adhered to religiously. Establishing an automated workflow ensures that every step of investment and operational due diligence is completed in sequence and documented in detail. Workflow management in the present will not guarantee zero unwelcome surprises in the future, but will protect you because it provides the information you need in a disciplined manner, and in strict accordance with your stated fiduciary documents.

Technology is now available to aggregate and store corporate knowledge, and make it available instantaneously, anywhere, on any device.

4. BUILD AN AUTOMATED FLOW, UNWAVERINGLY

A process consists of people, systems, and policies. While the process itself may often look sufficient at the asset class level (from a teams and technology perspective), firmwide, the processes look broken, incongruent, or incomplete. Regardless of the depth and frequency of data available, processes should be connected through a central nervous system. Currently, when a portfolio-level report is requested, data from various asset classes are gathered from disparate sources and combined into a single location, usually a spreadsheet. We call this "Excel ballet," because your staff has to perform a complex dance to bring all the data together in a massive manual exercise.

True multi-asset technology is available that enables you to have your data under one roof (e.g. database) with on-demand access to reports, with real-time numbers across all asset classes, with the press of a button.

5. HARNESS DATA, EFFICIENTLY

The process of portfolio data collection at most investment offices is still a hodgepodge of processes, ranging from automated feeds from custodians to phone calls received by their analysts from hedge funds. Against the backdrop of a short-staffed investment office, our fundamental belief is that all data-gathering processes should be automated or outsourced.

Services are now available to provide streamlined data-gathering functions and remove the daily burden of data collection away from the investment and operations staff.

6. STREAMLINE COLLABORATION, WISELY

The process of gathering a Board Package is particularly telling. The ingredients include data, opinions/write ups, validation, review, beautification, and distribution. This process is painful, lengthy, and inefficient. Why should it take 3 weeks for a Board Package to be produced? Why can't it be done in 2 days? The short answer is ultimately the lack of collaborative tools.

The good news is that there are now technologies available that can greatly streamline the reporting process and reduce the amount of time it takes to create a Board package.

CONCLUSION

In this paper, we concocted some possible scenarios and strung them along to create a "super" stress test to highlight how technology could have benefited you. We are sure your investment team can muster its own plausible scenarios, string them along, and play them through.

We are also certain that you will reach the same conclusion: nightmare scenarios cannot be avoided, but the investment office can make better use of innovative, appropriate, and modern technologies to at least manage them and minimize the losses associated with them.

ABOUT THE AUTHORS

Ken Akoundi, PhD

Since 1998, using his newsletter's insightful content (Investor DNA), Ken has built a loyal readership among Long Term Investors.

Ken was the President of ASPN Solutions (Spin-off from Protégé Partners), a financial technology company that challenged how Institutional Investors managed their processes. ASPN Solution's first product was a comprehensive solution designed to empower Long Term Investors across all their quantitative and qualitative knowledge needs.

Ken joined Opera Solutions (a Big Data McKinsey Spinoff) as the head of sales for the newly formed Capital Markets Group. His mandate included developing new Big Data products for Long Term Investors.

At Deutsche Bank, he created the Global Markets' Pension Strategies and Solutions group. The group was focused on providing Long Term Investors access to competitive and practical Capital Markets solutions that addressed many aspects of their business (from Risk Parity to liability Immunization products).

Prior to joining Deutsche Bank, he headed risk management at Optima Fund Management. In 1998, he co-founded RiskMetrics Group, where he last held the position of Chief Knowledge Officer.

Ken started his career at J.P. Morgan, where he managed software development, maintenance, and training. He has lectured on various risk management topics at NYU, Columbia, Baruch College, and NYU's Tandon School of Engineering. He holds a Doctorate in Civil Engineering from NYU's Tandon School of Engineering.

Clint Coghill

Clint Coghill is the Chairman and CEO of Backstop Solutions. Prior to co-founding Backstop, Clint was the Chief Investment Officer of Coghill Capital Management, a successful Chicago-based hedge fund management company he started in 1995. Among his other professional pursuits, Clint was the Founding Chairman of NFTE Chicago's Regional Advisory Board, which provides entrepreneurship programs to young people from low-income communities and reaches more than 2,000 youth per year. He is also the founder of two charitable Organizations, the Coghill Family Foundation and the Environmental Impact Initiative.

Clint received his Bachelor's Degree in Business Administration from the University of Arizona, and his Master's Degree in Business Administration from the London Business School.

ABOUT BACKSTOP SOLUTIONS

Because every minute matters, Backstop's mission is to help the institutional investment industry use time to its fullest potential. We develop technology to simplify and streamline otherwise time-consuming tasks and processes, enabling our clients to quickly and easily access, share, and manage the knowledge that's critical to their day-to-day business success. Backstop provides its industry-leading cloud-based productivity suite to investment consultants, pensions, funds of funds, family offices, endowments, foundations, private equity, hedge funds, and real estate investment firms.

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