

# Managing Black Swans

Professor Atula Abeysekera, FCGI took over as President of CGCA at the (virtual) Annual General Meeting held on 8 June 2020. Following the AGM, he gave a talk entitled 'Managing Black Swans'. It was timely in June, and is still as timely (maybe more so) now. We present a transcript here as it will be of wider interest than just those attendees of the CGCA AGM.



## The story about No 10

Can you imagine Downing Street in the frantic days of February, March, April and May of this year?

Well, I can give you an insight as to what it's like there.

In 2010, shortly after the financial crash of 2008, I was invited to No.10 to advise one of the most senior members of the Coalition Government.

The picture above is me on the day ...

... I confess it was rather thrilling.

My meeting – which then became a series of meetings – was with the Minister of State for Government Policy. And later I had interactions with other Junior Ministers.

Our first conversation was about sharpening up government's ability to foresee and plan for the unexpected.

1. To be better prepared for and smarter about avoiding risks.
2. To be constantly alert and avoid being mugged by what are commonly called ... Black Swans.

Is there anyone in Britain today who hasn't heard of Black Swans? Or, as Donald Trump would probably call them, Chinese Swans.

Our conversations were constantly interrupted by Larry. Larry as you may know is regarded as very important. He's allowed to go everywhere in the building and make his views and presence felt.

But ... Larry is a cat.

He's a rather irritating cat.

With all my meetings with the Minister he'd rub himself against my legs and occasionally give me a disapproving look. I'd reflect, "Larry doesn't agree with risk assessment and crisis planning" as the cat glared at me.

My thinking was this: Get rid of silo thinking.

I said the government should introduce "system thinking". In managing extreme risk there's always been too much departmental thinking. Cut across departments and a much broader and more intelligent consideration of risk challenges emerges.

This very nearly happened, but the politics of Brexit intervened. The iceberg that is Covid19 seemed a long way away from the Titanic of government back in 2010, despite my and others' cautions.

And that was very disappointing.

Today I wonder if I shouldn't have been more blunt and echoed George Osborne's mantra – *fix the roof while the sun's shining*.

But I didn't and – anyway – I suspect they wouldn't have listened ... then.

***Government is – always – more concerned with today's news story than the future.***

Its preparedness for risk remains more hopeful than prudent.

My role in all this is that I've spent my life in risk management. I'm regarded as having expertise and long experience in the field for over 30 years.

## "Engineering thinking" leads the way

My proudest day – apart from the achievements of my three children – was when I was asked to become Professor of Risk at Imperial College, London. This was at the department of Civil Engineering, arguably, the best civil engineering department in the world.

I started life as a chartered engineer. I did a 5 year stint of apprenticeship at Mott MacDonald, an organisation over a century old. It was a wonderful place to learn about engineering. Engineers learn about risk the hard way. If they get things wrong, buildings fall down and people die.

Recently on a BBC Radio 4 programme the achievements of George and Robert Stephenson, the Victorian engineers and 'Father of Railways', were being discussed. An interviewer asked how important engineers were seen as being back then. Engineers were revered in the 1880s – we were told. They had great influence. Men like Brunel, Bazalgette and Watt.

Of Prime Ministers since 1721, only five graduated in anything scientific: Gladstone

and the Marquis of Salisbury studied mathematics; Baldwin and Chamberlain engineering metallurgy. Alone ... Margaret Thatcher ... read Chemistry. She was our only real scientific PM in 300 years. (Incidentally, Angela Merkel is a physicist by education.)

Only two engineers. A great shame. Because engineers are good at risk assessment. This is what they spend most of their life doing.

That's what the recently late, and certainly great, Jack Welch, Chairman and CEO of General Electric in the 1980's believed. He graduated – and did his PhD – in Chemical Engineering and he said:

*[Engineering is...] "one of the best backgrounds for a business career. There are no formulaic questions to most business problems. The same is true of engineering."*

So a third of me is an engineer. A third is a senior risk officer at Schroder Cazenove (an institution that's 236 years old, where risk assessment is vital.) A third is a teacher at Imperial College.

Risk, engineering, investment and teaching – these are my greatest loves after my family.

## Thinking Small – a new way forward

The benefits – and the risks – of globalisation have been brought to life – and death – by the coronavirus pandemic.

Ten years ago I produced for government a short book called "What's the small idea?" In it I argued that a big drive of innovation was key to our future national prosperity. And innovation starts in *small* places. Usually with individuals and small businesses.

But innovation by definition takes one into the unknown and that's risky. Innovation is found in a *small* lake where Black Swans swim. I talked about *small ideas* because one of the things government consistently exaggerates is the power of big, centralised government. I believe exactly the opposite is needed: *decentralisation and the licence to think small*.

In trying to solve any problem, you need to break the problem into smaller components and take small steps. This is better than attempting great, audacious, problem-solving leaps.

In computer science a divide-and-conquer algorithm works like this. By recursively breaking down a problem into two or more sub-problems of the same or related type until these become simple enough to be solved directly.

## FEATURES

### What has changed as a result of my Initiative?

First – some good news.

The most satisfying thing about my spell at No.10 is that a few things did change and to good effect.

1. Each government department now has a lead Non-Executive Director responsible for interrogating Black Swan Risks.
2. Investment has been made into “*Horizon Planning*” thinking about tomorrow and the day after tomorrow not just today. These are made up of academics, people from industry and ‘wise’ men and women.
3. The initiation of “Three Lines of Defence” for risk framework for major infrastructure projects. Treasury now insists on a documented risk assessment encompassing three lines of defence.

The real key lay in shifting thinking away from “*how do we react?*” to “*how would we react if the unthinkable happened and what’s missing in our toolkit to deal with such an eventuality?*”

Interestingly the former Minister of Government Policy has just written a book called “*Apocalypse How?*” set in the year 2037. Its thesis is that our increasing reliance on integrated digital technology may be leading us, and ultimately every country in the world, in the direction of a catastrophe. We are getting so integrated that when the system fails, everything in our lives will fail ... driverless cars, WiFi, phone systems, utilities, emergency services and media – everything blacks out. It’s a disturbingly dystopian vision. As I read it I felt rather flattered to find so much of our conversations in Downing Street had found their way into his book.

But here’s the bad news.

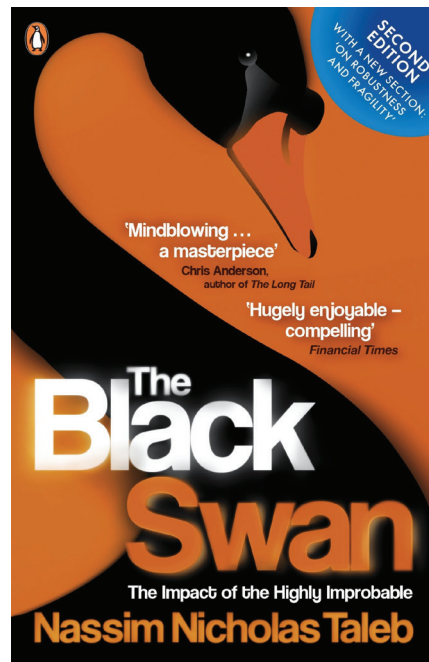
All that listening, all that nodding and all that’s in his book says that he got it. That he understood the importance of being ready. But then? Nothing happened as it should have done. Especially in investing in critical issues like crisis planning.

### What about the story of Black Swans?

Where did this strange breed come from? The phrase “*black swan*” was created by the 2<sup>nd</sup>-century Roman poet Juvenal signifying something that doesn’t exist, that can’t exist.

Black Swan was widely used in 16<sup>th</sup> century London as a statement of impossibility. But in 1697 Dutch explorers saw Black Swans in Western Australia and the impossible became reality.

More recently author, academic and future and options trader, Nassim Taleb wrote a book called ‘*The Black Swan: The Impact of the Highly Improbable*’.



In a fast moving world we’ve come to believe that our advanced technology has given us greater control over our destinies, that social media has given us information, opinions and news at such breakneck speed that this makes us omnipotent.

We are constantly told that knowledge is power ... but it isn’t. We never know enough. Even the smartest get it wrong. A Black Swan is something that you don’t know about because:

1. It occurs outside projected expectations.
2. It carries an unexpectedly extreme impact.
3. It seems only explainable after the fact.

A Black Swan could manifest itself like this: it actually happened to a friend of mine. He took a great-sounding C-suite job involving moving from the UK to Tokyo. This was at a considerable personal cost and disruption to the family. On the day he arrived, a major earthquake happened in northern Japan. There, a nuclear reactor was flooded by sea water. The waves produced by the particular earthquake were so large that the sea barriers at the reactor proved 8m too short to stop the resulting tsunami. The damage was substantial, and this created a mini-recession in Japan with remediation cost of \$250bn. He was made redundant and returned to the UK at significant personal financial costs.

Could he have predicted this? No. It was a Black Swan – an extreme event. An unforeseen event. But on reflection an event that should have been foreseen (and was foreseen by an ignored few engineers.)

Big companies spend a lot of money identifying Black Swans but this expertise is not widely available to individuals or small businesses or governments.

*In the future we shall increasingly need to assess how much we must invest to mitigate the risk of something bad happening.*

Be they floods, earthquakes, invasion, war, a global collapse of the Internet, a worse pandemic and so on.

Apparently, all risk analyses done as recently as last year’s Davos Economic Review thought a pandemic would potentially have high impact but that there was only a relatively low likelihood of its happening.

They simply forgot to factor in an important component – Velocity. When something bad happens it behaves like a tsunami. It gets bigger, worse and accelerates very quickly.

One way to help avoid Black Swans is to widen your research and consult people outside your industry network. This helps to reduce groupthink, get fresh ideas and understand the potential risks you face.

I must also stress the importance of modelling – stress testing and scenario analysis. A ‘good’ model is as good as the quality of data feeding into it. Otherwise garbage in and garbage out. The models need to be independently validated and continuously recalibrated.

Whilst a model can give some guidance, sole reliance on it can be equally dangerous. Ultimately, in my opinion, there’s nothing to beat experience and knowledge from other, diverse industries.

Black Swans are often bad luck. You can’t beat bad luck but you can shorten the odds.



**In 1697 Dutch explorers saw Black Swans in Western Australia ...  
... and the impossible became reality**

Photo: Ellerslie / Shutterstock.com



## What's the small idea?

Innovation and Risk Culture in Government



Atula Abeysekera

### Consider the Coronavirus issue.

The Government was juggling. It was trying to protect the NHS's capacity to cope, to safeguard the lives of the fit and well, to save the elderly and less fit from untimely death, to keep the economy ticking over and capable of being restarted and, finally, it was trying to sustain trust and confidence in central government.

It got some things right. But it did not grasp the importance of velocity and failed to prepare adequately.

### In 2007 Black Swans were rare – now they're everywhere

Black Swans are not only a reality – they are becoming commonplace. There are flocks of the wretches wherever you look. Plagues of locusts in East Africa, bush fires the size of the UK in Australia, floods – a month's normal rainfall in a day now commonplace in parts of the UK – earthquakes in Turkey, volcanoes in New Zealand and of course catastrophes like the Grenfell Tower fire.

### My work on the Grenfell Enquiry

I am a little closer to that particular Black Swan event. I was asked to serve as one of the industry experts to assist the Government on how to change the culture to support greater building safety following the tragic Grenfell fire. We had to implement recommendations from Dame Judith Hackitt's Independent Review of Building Regulations and Fire Safety in 2018.

Twelve of us, made up from different industries, met every two months from November 2018 under the Chairmanship of Dame Judith with the remit to:–

1. Hold to account industry players responsible for driving forward specific changes of the Building Safety Programme and ...
2. Accelerate the industry culture change to prevent a Grenfell disaster ever happening again.

Dame Judith's 159 page final review pulled no punches and concluded:

*"... the current system of building regulations and fire safety is not fit for purpose. The system failure identified in the report has allowed a culture of indifference to perpetuate."*

A culture of indifference ... hmmm!!!

"A culture of indifference" is pretty damning.

The increasing need for rigorous scrutiny in a number of sectors in their processes and their attitude towards risk has been deemed urgent. Perhaps some of my urgings and pressure have helped make this happen. I hope so.

Recently I've been asked by Dame Judith to examine the relationship between the insurance business and the construction industry which many believe is broken. I'll be doing this as an external expert working with and guiding a ministry team.

This world of risk is getting hot.

### Why are you doing this?

There's a big question I was frequently asked. For instance, a senior and active member of the House of Lords quizzed me as to why I

was doing this. Why was I prosecuting my lonely course of trying to get busy politicians and cabinet ministers to turn their attention towards and think about the unthinkable.

There are four simple reasons:

1. Because I believe it really matters, especially in such a fast moving world.
2. Because I believe by being intelligent, circumspect and calm we can avoid many expensive and tragic events.
3. Because I passionately believe the short termism culture must change. Politicians' attitudes towards managing risk are woeful.
4. *Because I believe we can tame Black Swans*

### Advice from an Advisor, Professor and Thinker

I'd like to conclude with seven pieces of advice that I'd urge you to think about.

1. **Think small.** Think in manageable chunks. Remember the computer engineers who take small steps solving big problems. Thinking small can lead to big solutions.

2. **Think velocity.** We are (as I've said) living in a fast moving integrated world. And it's getting faster. If we can't keep up with its speed we shall fail.

3. **Think about resilience.** Are you tough and calm in a crisis? Do you panic?

In another book by Nassim Taleb called *Anti-Fragile. Things that gain from Disorder* he reflects that human bones get stronger when subjected to stress and tension. Similarly many things in life benefit from stress, volatility and turmoil. *Anti-Fragile* is resilience lifted to a new level. Anti-fragile describes things that not only gain from chaos but gain immunity when exposed to change.

4. **Think radical.** People are prone to talking about normal ... in a crisis they say "when things get back to normal". In my experience normal is history and you can't turn back the clock. You must go forward. Radical is the new normal.

An example of this was the speed of construction of the Nightingale Hospital at the Excel centre. Not normal. Just radical.

5. **Think failure.** When I was young, I remember a friend who deliberately broke his toys. He pulled them apart to see how they worked.

We test cars by crashing them. We constantly run pressure stress tests to see how financial systems will survive or fail. Thinking about failure is thinking about consequences.

6. **Think individual, then local, then national and then global.** Build your thinking from the bottom up. Thinking about the big picture and globalisation leads us away from the most important thing of all ... people.

7. **Think people.** Put people first, not processes. If you think about people first, I believe you'll be on course to help create a better, stronger and happier world.

If you have questions please ask them. I'll take the risk that I can manage to answer them.



Grenfell Tower

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