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**PANEL 4: CHALLENGES IN COMMUNICATION:
COMMUNICATING RISK RESPONSIBLY**

“Risk Communication in the Real World”

The Carrington Event

In 1859, a powerful solar flare induced a huge geomagnetic storm on earth. It was named the *Carrington Event* after one of the astronomers who observed the phenomenon.

In those days, it was merely an astronomical curiosity, causing bright auroras around the world, and disrupting telegraph operations. Hardly anyone would have been aware of it.

However, if a similar event were to happen today, it would be impossible to ignore. Its impact would be catastrophic, and global, because of our high-tech and highly-interconnected infrastructure. Electrical grids which are not buried underground would be knocked out, as if by a massive neutron bomb. Restoring them could take months, even years. Of course, satellites would be at great risk. Not just telecommunications but also other essential services like GPS would be

disrupted. The first order effects would be devastating, but the second and third order effects perhaps even worse.

The Carrington Event is thought to occur every hundred years or so. Many scientists think that we are overdue for another one, because solar activity is building up once again.

This is clearly a serious risk. It is not just a possibility, but can be assigned a probability.

Like many risks of this nature, few are aware of it, and even fewer are motivated enough to take action to mitigate it. But we should not be surprised that such big risks are often overlooked, or ignored.

The Thai Floods of 2011

Many will recall the Tohoku earthquake of March 2011, and the Fukushima nuclear disaster that followed. Fewer will recall the massive flooding that inundated large parts of Thailand at the end of the year. Both emerged as among the costliest natural disasters on record.

The World Bank estimated the economic cost of the Thai floods at US\$46 billion, compared to the Tohoku earthquake's US\$235 billion. Although Bangkok was flooded, the much larger insurance claims were made against damage

occurring outside Bangkok where major industrial parks are located. Several of them were covered by floodwater for weeks. As a result, production ground to a halt, and global supply chains of major companies as varied as Toyota, Canon, and Western Digital, were disrupted. Ironically, for Japan's big three property casualty insurers, the floods proved even more costly than the Tohoku earthquake.

Not a Black Swan

Nicholas Nassim Taleb famously described rare and hard-to-predict events as "black swans". Black swans have another important characteristic, which is that their impact is large.

The Thai floods of 2011 undoubtedly had a large impact, but they were neither a rare nor a hard-to-predict event. They were not a black swan. Everyone knows that floods occur frequently during the wet season along the low-lying Chao Phraya river system.

But before 2011, Thailand experienced no major flood loss significant enough to attract the attention of the insurance industry. Indeed, it appears that the insurance industry simply never paid much attention to full downside potential of the flood risk in Thailand. The country's flood hazard had not been modelled, and its potential impact was poorly understood and appreciated. Perhaps, floods occurred with such regularity that everyone was inured to them.

Cognitive Biases and Risk

The reasons why are centred on a special type of failure that all human beings are prone to: these are our *cognitive biases* or blind spots. It is deeply embedded in our human nature.

For example, the *availability heuristic* is the tendency to overestimate the likelihood of events with greater “availability” in memory, which can be influenced by how recent the memories are, or how unusual or emotionally charged they may be. So, after a terrorist attack, we will think that another terrorist attack is a more likely risk than something else, simply because it is fresh in our minds.

The availability heuristic is illustrated via an observation made by Gerd Gigerenzer, a German psychologist who studies risk. He found that in the months after 911, passenger miles on the main US airlines fell by between 12% and 20%, while road use jumped. The change is widely believed to have been caused by people opting to drive rather than to fly. But travelling long distances by car is actually more dangerous than travelling the same distance by aeroplane. Professor Gigerenzer estimated that an extra 1,600 Americans died in car accidents in the year after the 911 attacks – indirect victims of the tragedy.

Identification, management and communication of risk must take into account this human tendency to underestimate or overestimate risk because of our cognitive biases.

The Black Elephant

After the Asian Financial Crisis, in the boom years leading up to 2008, most people dismissed the risk of another financial crisis happening. Before 2008, central bankers felt that they had mastered macroeconomic management to the extent that prolonged inflation and deep recessions were no longer possible. A massive *hubris* dominated the financial world. Those who foresaw an impending crisis were roundly ignored. When it happened – the global financial and economic crisis of 2008/2009 – the consequences were catastrophic.

Much of our reluctance to grapple with such game-changing issues stems from an unwillingness to face the consequences of an uncertain and unpredictable future. These consequences interfere with long-held mental models – and business or self-interest – creating *cognitive dissonance*. At the heart of it, cognitive dissonance is about denial: the inability to acknowledge uncertainty, and an unwillingness to accept the need to adapt to a future that might be radically different from the current reality. It is a form of cognitive bias.

Cognitive dissonance leads to many organisations – including governments – underestimating risks, ignoring warning signs of impending crisis, and taking decisive action only when the crisis unfolds. This is the mother lode of *black elephants*.

What is the black elephant?

The black elephant is a cross between a black swan and the elephant in the room. The black elephant is a problem that is actually visible to everyone – the proverbial elephant in the room – but no one wants to deal with it, and so we pretend it is not there. When it blows up as a problem, we all feign surprise and shock, behaving as if it were a black swan.

Arguably, the Thai floods of 2011 is an example of a black elephant. So a little more rain than the historical maximum in the northern region, compounded by man-made factors such deforestation, led to a “perfect flood” in 2011. The floods also highlighted Thailand’s important role as a key supplier to global supply chains. But this role had been underestimated or overlooked even as it had grown quickly over two decades. Before 2011, it would have taken a big leap of imagination to connect flooding in Thailand to major disruptions of global supply chains.

The Challenge of Prediction

The reality is that it is extremely difficult to estimate the occurrence of such extreme events that result because we live in an interconnected world. What happens in one part of the world can affect other parts of the world – the so-called “butterfly effect” which postulates that the flap of a butterfly’s wings in Brazil can set off a tornado in Texas. At the core of the butterfly effect is the concept that small disturbances can have large effects.

Globalisation increases and intensifies connections, as does the Internet. Urbanisation is accelerating and densely connecting people as never before. As connections intensify, the frequency of disruptions will increase and the amplitude of their impact will grow. In other words, big risks will increase.

Unfortunately, such big risks are very difficult to forecast, and estimating their impact is very challenging. It is even more difficult to persuade people to overcome their cognitive biases, and to confront such risks.

Risk as a Social Construct

It seems to me that big risk is not the province of actuaries. Instead it is a broader social construct, meaning that a country, an organisation, and its people, all need to agree that a risk exists. This is important as resources need to be

allocated to prevent the risk, or to mitigate its impact, for example through contingency planning, or construction of defensive infrastructure, or even just paying for an insurance premium.

As a social construct, understanding what that risk is, agreeing on the degree of risk, and then communicating that risk is needed.

In the Netherlands, the number one big risk is flooding. One-fifth of the total land area is below sea level, reclaimed from the sea over the centuries, and protected by a complex system of dykes and pumping operations. These reclaimed lands are called “polders”. Over centuries, the Dutch have developed a clear sense that “we are all living in the same polder, and that our survival depends on each other’s survival”. Since the catastrophic flood of 1953, billions of dollars have been spent building more dykes and barrages. But I think it would be difficult to find a Dutchman who will disagree that this is money well spent. It is no surprise that after the events of 2011, Thailand launched a massive, but long-overdue, flood alleviation effort.

Risk Communication in the Real World

Of course, we should not wait for a disaster to happen before taking it seriously. But the reality is that agreement on what constitute the greatest risks must be reached through consensus. Without that consensus, it will be difficult to

allocate resource to mitigate these big risks. A conversation to assess these risks is important. The British approach, of drawing up a National Risk Register is one way to initiate conversations at the national level on the big risks, and is worthy of consideration.

The Importance of Public Trust in Risk Communication

However, this is easier said than done. Communication of this nature depends on public trust – the people’s trust in government, its institutions, and its leaders. The political scientist, Francis Fukuyama, refers to public trust as the “currency” of governance, because it is a key social lubricant for information to flow, and it brings about more efficient information exchange. Effective risk communication clearly depends on high levels of public trust.

The Emergence of the “Post-Truth” World

But unfortunately, the reality today is reflected in the latest 2018 Edelman Trust Barometer, in which the “global” level of public trust in government stood at 43%. At this level, a state of “distrust” exists in the world. A year earlier, the headline for the 2017 Edelman Trust Barometer was “Trust in Crisis”, with trust in government, the media, business and NGOs at an all-time low.

This is compounded by the emergence of a “post-truth” world in which truth matters less, and people are more willing to offer diverse views with little substance and no evidence, and then taking no responsibility for expressing them. This is accentuated by Internet anonymity, which allows people to disseminate irresponsible views to a wide audience – “fake news”. Such falsehoods can severely erode trust, and very quickly. Falsehoods, no matter how ridiculous, are often believed to be true if repeated often enough.

In this climate, risk communication is extremely challenging. Technology – the social media in particular – now enables people to retreat into online echo chambers that narrow down information and reinforce already-held beliefs – our cognitive biases. It becomes easy to ignore, or to simply shut our eyes to contrary views that are in conflict with our beliefs and outlooks.

How can we limit or counter the influence of such bias? Obviously, the occurrence of a crisis that radically alters our mental models is one corrective. But while crises can break our outdated mental models, they are an expensive way to force recognition of our biases. No government or society should have to wait for an actual terrorist attack to take the threat of terrorism seriously.

Conclusion

It is certainly an age in which individuals matter as much as institutions because people, empowered perhaps by better education, but certainly by the social media, are becoming social influencers.

Therefore, reaching out to the people is an essential part of risk communication, as much as government and its institutions need to find ways to deal with a world of radical transparency created by technology and the social media. Building trust between the government and the people is essential to effective risk communication, but it is an Herculean task when public trust is apparently in decline the world over. Acknowledging and overcoming our very human cognitive biases is critical to good risk communication, but it is arguably the most difficult to achieve.

Nevertheless, like Don Quixote tilting at windmills, governments must be prepared to consult more, despite an environment of greater contestation and scrutiny. The balance between risk communication at the focal point of government and its institutions is now shifting to the many – the people.

Thank you.

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