



Introduction

In 1488, Portuguese nobleman Bartolomeu Dias discovered the Cape of Storms or, as it was later renamed, the Cape of Good Hope. Dias was on a royal mission, appointed by King John II of Portugal to head an expedition around the southern tip of Africa in hopes of finding a sea-based trade route to India. The discovery of the Cape of Good Hope meant that Europeans could trade directly with India and bypass the overland route through the Middle East, which was controlled by the Ottomans, with its expensive middlemen. Even though the voyages were far beyond their borders, the traders in the Middle East were adversely affected; indeed, they were disrupted. This eventually led to the rise of Western European Age of Discovery powers such as the Portuguese and the Spanish and the eventual downfall of the Ottoman empire which, in the years following the death of Suleiman the Magnificent, had been labelled ‘the sick man of Europe.’”

Yet, we must not forget that the Ottomans themselves disrupted one of the greatest empires in global history – Roman Empire under the Byzantines. The wars between the Byzantines and the Ottomans culminated in the conquer of Constantinople in 1453 by the Ottomans, which effectively ended the Roman Empire. The Ottomans became the dominant empire due to their innovations in military strategy and the prominence of Muslim intellectuals such as Ibn Khaldun, Ibn Battuta, and Al-Kashi while the Romans, and much of Western Europe, were mired in the Middle (or Dark) Ages. Of course, the Romans themselves had displaced the Greeks as the dominant global hegemon centuries

earlier. Hundreds of years later, the Portuguese and Spanish, which had disrupted the Ottomans were themselves disrupted by the British Empire and its Industrial Revolution. Innovations in technology for textiles and manufacturing, such as the Spinning Jenny and the Steam Engine, enabled the British to become the largest empire in world history. Of course, subsequently, the British themselves were disrupted by the industrial powers of Germany, Russia and the United States. In short, while it is true that the overall picture is more complex, the rise and fall of entire *empires* and *hegemons* can also be viewed via the lens of innovation and disruption.

If this sounds familiar, it should: this rise and fall of empires due to disrupting and being disrupted is exactly the fate of many companies and nations today as a result of what economist Joseph Schumpeter called ‘creative destruction’. ‘Creative destruction’ is a process by which new technologies, products, methods of production and means of distribution make old ones obsolete, forcing existing companies to rapidly adapt or fail entirely. More recently, we have also seen the rise of a different development: cheaper and poorer-quality products that initially reached less profitable or non-target customers, but eventually reshaped entire industries as core customers changed the way in which they perceived and valued products. This process is what management guru Clay Christensen terms ‘disruptive innovation.’

To be clear, both ‘creative destruction’ and ‘disruptive innovation’ result in winners and losers. However the goal, idealistic as it may be, is to maximise the benefits of such processes; thus, winners receive their rewards or returns, and the costs are minimised such that people, firms, and nations do not become totally obsolete. In particular, if people are any firm or nation’s ultimate stakeholders, then we need to ensure that their livelihoods, cultures and lifestyles are not entirely destroyed. Disruption is necessary; adapting to the evolution of political, technological and socio-economic environments is crucial to thriving. However, this must be differentiated from pure destruction. Thus, we invoke the term ‘Creative Disruption’, differentiating it from Creative Destruction, which can be understood as changing the way core customers are valued, profit pools are restructured and even how entire industries are reshaped, but in a dynamic, creative and *ethical* manner.

Creative Disruption or: How I Learned to Stop Worrying and Love the Adventure

The pace of innovation is increasing, as evidenced by the reduced length of the Schumpeterian Cycles of Innovation and Entrepreneurship. In 1785, the first Schumpeterian Cycle (also known as the Kondratiev Wave) of water power, textile and iron lasted 60 years, but the most recent Cycle of digital network, software and new media is expected to last 30 years. Examining patent registration reveals more: since the 1970s, patent registration in the United States increased exponentially. In

addition, in terms of years of adoption – measured by years it takes to achieve a 90% penetration rate in local markets – the tablet took just 7 years to reach 90% penetration whereas the car, invented in the late 1800s took 75 years.

At the firm level, this furious pace of technological innovation is shortening the lifecycle of companies. At the beginning of the last century, the average life span of an S&P 500 company was greater than 60 years, whereas it stands at just 18 years today. 98% of American companies disappear within 11 years. The average lifespan of a company in Japan and Europe is 12.5 years. In terms of CEO tenure, the average tenure of Fortune 500 Company CEOs has declined from about 10 years in 2000 to 8.1 years in 2012¹. On the jobs angle, researchers at Oxford suggest that 47% of today's jobs will be replaced by computers and machines within the next two decades. At its height, Kodak employed 145,000 people; Facebook employs just 6,000 while Instagram, when it was bought by Facebook for \$1 billion, employed just 13.

Yet, for all the benefits that innovation brings, there can be significant costs or dangers as well. For instance, there were the Middle Eastern and Silk Road traders who were adversely impacted by the Portuguese discovery of a sea route to India and the Far East. Examples abound in history of people who had their jobs replaced by automation in manufacturing such as in the automotive industry in Detroit or replaced by disruptive outsourcing such as in the United States and in Europe. Furthermore, research has shown that while productivity and employment in the United States have closely tracked each other for decades after World War II, that pattern has started to decouple after 2000². The trends diverge: productivity continues to rise but employment growth has halted, and by 2011, a significant gap appears between the two lines, showing economic growth “with no parallel increase in job creation.” The authors argue that technology is behind “both the healthy growth in productivity and the weak growth in jobs.” Thus, innovation and Creative Disruption is a potentially lethal double-edged sword.

With that said, despite the costs of innovation, its exponential acceleration should not be thought of as a doomsday scenario. Ultimately, whether or not we can engender a robust innovation economy hinges upon our ability to balance our desire for stability and security with the dynamic change that innovation brings and thus, engender Creative Disruption rather than Creative Destruction. We must focus our harnessing of Creative Disruption such that its benefits accrue to all stakeholders, be it the

¹ It is true that average CEO tenure increased to 9.7 years in 2013, but this is due to CEOs who delayed their retirements in the wake of the economic downturn, thus extending their time in the post. CEOs who departed in 2013 were older at an average of 62 years compared to an average of 60 years from 2000 to 2012. The extra 2 years of work explains, for the most part, the increase in average tenure in 2013.

² For more, please see the 2014 book, “*The Second Machine Age: Work, Progress and Prosperity in Time of Brilliant Technologies*” by Erik Brynjolfsson and Andrew McAfee.

nation, the firms or the people. We must therefore be inclusive to generate truly robust development. This ergo requires us to pursue Inclusive Innovation, defined by the World Bank as "any innovation that leads to affordable access to quality goods and services for the poor on a sustainable basis and with extensive outreach."

This concept is perhaps best highlighted by Charles Leadbeater in his book, *The Frugal Innovator*. In it, he describes the four attributes of 'frugal' or, indeed, inclusive innovation which are lean, simple, clean and social. Lean is about constructing systems that cut out all forms of waste. Simple is about optimising functionality to the essence of what is needed, making the innovation easy to use and thus enabling it to spread rapidly. Clean is about re-thinking, looking to re-use ideas, products meant for other purposes and waste, with a focus on business models. Social is about involving a larger network of people in inclusive innovation to generate the desired outcomes. Furthermore, such innovations can come in many shapes and sizes; it is not always about technology. Malaysia, for instance, has seen some truly Inclusive Innovations that were not technology-driven but were, rather, institutional innovations. One such example is FELDA³ land schemes, launched in 1957, which worked to resettle the rural poor into newly developed areas and to organise smallholder farms growing cash crops, unlocking economic opportunities for millions of people. Another is Tabung Haji, the world's first modern Islamic bank, which has financially enabled millions of Muslims in Malaysia to pursue the *hajj*, who otherwise might not have been able to.

This notion of marrying Creative Disruption with the need for social inclusion leads us to the theme of this year's Khazanah Megatrends Forum which is, "**Harnessing Creative Disruption: Unlocking the Power of Inclusive Innovation.**" As we have seen, innovation is a powerful force of nature; one that is set to grow exponentially moving forward and as such, cannot be ignored. How we utilise that innovation ultimately determines whether we achieve Creative Disruption or not. Thus, this year's Khazanah Megatrends Forum seeks to explore ways in which we can optimally and ethically *harness* the power of Creative Disruption, wielding it to our purposes such that we can ensure the continuing growth of nations, firms and, most importantly, people. Central to enduring this hyper-speed era of innovation is the spirit of adventure. Adventure comes with uncertainty, and this resonates deeply with contemporary times where uncertainty is normality and increasingly so. The spirit of adventure will prove paramount in embracing risk and change to reap the rewards of Creative Disruption and unlock the power of Inclusive Innovation.

³ Federal Land Development Authority

Towards an Innovation Economy: The Malaysian Context

The momentum of economic growth in Malaysia has fallen over time. Growth has averaged at just 4-5% per annum over the past decade and a half, compared to 6.5% between 1980 and 2000. Furthermore, post GFC, be it a result of introducing stimulus packages to support the economy or lower global costs of capital that led to increased debt-based consumption, household and government balance sheets have been stretched. In addition, there has been a sharp decline in investments as a share of GDP, which reflects a diminishing anticipated rate of return on capital. Looking at listed Government-Linked Companies (G20), net profits grew at a compound annual growth rate of 10.2% from 2004 to 2014; while a large portion of this growth was due to the GLC Transformation Programme (GLCT) which improved efficiencies and enhanced governance, this was also in some part driven by global megatrends like the commodity and credit cycles. However, recent broader macro factors such as the weakening Ringgit and declining oil prices are expected to impact G20 net profit in 2015. This does not bode well for Malaysia. In this low growth environment, it is more vital than ever for the country to innovate.

But the economics of innovation are very different for those at the frontier versus those who are striving to catch up. According to Ricardo Hausmann, to grow in wealth, countries need to diversify by shifting into increasingly sophisticated and unique products. When we consider the economic history of Malaysia, there is a host of structural transitions in its economy, shifting from an agriculture-based economy in the 1960s and 1970s to a manufacturing-based economy in the 1980s and 1990s and onto a services-based economy in present day. These transitions were enabled by adopting technology from abroad and supporting entrepreneurial private enterprise through state investments, protective tariffs, and subsidies. As demonstrated by Ha-Joon Chang in his book, *Kicking Away the Ladder*, this is a common development policy strategy in many nations that are far from the global technology frontier. After all, you have to learn to build the wheel before you can build the Tesla. This allowed for the flourishing of the Electrical and Electronics Industry in Penang, the development of the steel industry in Malaysia and perhaps most iconic of all, the introduction of PROTON, indigenously-designed and produced passenger cars.

Therefore, countries grow and economies undergo structural change by producing different things, not necessarily more of the same. A development strategy of technology adoption may function very well, but only up to a point, as evidenced by the tin mining, the Electrical and Electronics and the automotive industries in Malaysia. Beyond this limit, economies need to diversify their product in order to thrive – or even survive. Perhaps more worrying for the status quo, from a macro-economic standpoint, is that capital is at its most mobile since World War 1, enabling would-be domestic investors to park their money elsewhere. Recent examples include the disruption of Malaysia Airlines

by Air Asia, and the disruption of telecommunication companies such as Axiata, Maxis and DiGi by free data-based communication platforms such as WhatsApp. In the future, we may even see disruptions to the electricity grid distribution of Tenaga Nasional Berhad via renewable energy sources that allow buildings and communities to take themselves ‘off-grid.’

Harnessing Creative Disruption – If It Ain’t Broke, Fix It Anyway

In sports, it is a generally widely-held belief that it is easier to win a championship than it is to defend it. Similarly for individuals, firms and nations, past successes – great heights though they may be – can sow the seeds of future failure. The reasons are numerous; perhaps it is due to pure complacency, a belief that government protection of vested interests will endure, or even a fallacy of financial metrics that are ill-prepared for an age of Creative Disruption. The spirit of adventure that enabled the initial success may have fizzled out in its maintenance. Therefore, we must ask ourselves: what sort of tools, methods and thought processes do we need in pursuing Creative Disruption within the individual, firm or nation, and how do we equip ourselves to best navigate through its exponential evolution? Innovation is at the heart of the solutions to these issues, but how do we actively engage in innovation, and what kind will it be?

In hypothesising through a framework to answer those questions, we turn to Harvard management guru Clayton Christensen. In his article, “The Capitalist’s Dilemma,” he introduces three forms of innovation. The first is called *performance-improving innovations*, which replace old products with new and better models. The second is *efficiency innovations* which help companies make and sell mature, established products or services to the same customers at lower prices. This form of innovation is most related to operational efficiency. The third is named *market-creating innovations*, which transforms complicated or costly products so radically that they create a new class of consumers or market altogether.

Translating these innovations to the context of economies, firms and people is fairly straightforward. In essence, we can ask the following three questions – firstly, how do we create better products or outputs (whether it is more inclusive growth or an iPhone or our financial analysis skills)? Secondly, how do we make ourselves more efficient in what we do (whether it is reducing the leakage rate of social programs, personnel re-juggling or exercising in the morning)? Thirdly, what is something new that we can do to improve ourselves (whether it is a new economic industry or a deeper understanding of economic history)?

Therefore, the evolution of technology is such that, as we progress, nations, firms and people not only need to engage in Creative Disruption by embracing innovation, but must also prepare to be disrupted. To wholeheartedly engage in a vortex of Disrupting and Being Disrupted requires a spirit of risk-taking and adventure. While adventure may be one of the core values required for Creative Disruption, we must also leave room for ethics – how do we ensure that we are well-equipped to undertake Christensen’s three forms of innovation in an ethical manner, and what are the challenges in doing so? It is this broad set of questions that the 2015 Khazanah Megatrends Forum seeks to confront to guide policymakers, corporate decision makers and, finally, people, to thrive in an era of pervasive disruption while simultaneously ensuring that the gains from Creative Disruption accrue to all stakeholders in the local, national and global communities.

The Panels

The Khazanah Megatrends Forum is now a decade old. In that decade, the KMF has discussed themes ranging from a shifting global economic climate to a reclamation of the global ‘commons’, a new context where uncertainty is normality to the need to generate growth with inclusion in an age of paradox, and most recently, the need to scale the efficiency frontier. In those discussions, the KMF has always emphasised the need to move beyond the maximisation of shareholder value to the maximisation of *stakeholder* value – in this case, the nation, the firm and the individual. Thus, in keeping with the tradition of KMF, panel discussions on *Harnessing Creative Disruption: Unlocking the Power of Inclusive Innovation* will continue to be organised along four perspectives: on how the various markets are affected, what does the theme mean to firms and society in general, and what are the imperatives of leadership?

Session 1: Macro and Markets – From Mountain High to River Deep: Will Emerging Markets Become ‘Submerging’ Markets?

In the years leading to the burst of the Dot Com bubble in the early 2000s, investors were frenetically trying to put as much of their money into internet-based companies, regardless of revenues at the time. Internet-based companies were the next big thing, or so the market thought, leading to an ‘Animal Spirits⁴’ type charge of investors into the bubble. This facilitated vast amounts of physical hardware such as cable lines for connectivity that would power the Dot Com companies in their

⁴ ‘Animal Spirits’, coined by British economist John Maynard Keynes, in his 1936 book *The General Theory of Employment, Interest and Money* to describe the instincts, proclivities and emotions that ostensibly influence and guide human behavior.

operations. When the bubble burst, Dot Com companies went bankrupt and their investors were left with billions of dollars in losses. However, the physical hardware prevailed and the mass supply of cables worldwide laid the foundation for internet adoption on a truly global scale.

Animal Spirits would rear its head again. Due to the Dot Com bubble's burst, the Federal Reserve cut interest rates in the United States, encouraging higher volumes of mortgages by more Americans, even if they could not afford it. We all know what happened next: the Federal Reserve raised rates, which led to defaults on mortgages and foreclosures that catalysed the near-collapse of the American financial system. The 2008 Global Financial Crisis and the subsequent Eurozone Crisis produced slackening economic performance worldwide. However, cheap money soon flooded global markets when the Federal Reserve cut rates to zero and undertook aggressive quantitative easing. This cheap money needed to find a home; it flowed into emerging markets in search of yield, and into technology in search of growth. Arguably, the latter, helped along by greater capital mobility than ever, spurred venture capital and angel investments in new cutting-edge technology businesses globally.

However, in the past year, beginning in mid-2014, the threat of external headwinds has risen significantly. Global commodity prices, particularly oil, have dropped precipitously. China's economic growth has decelerated and, further, the People's Bank of China have undertaken a series of devaluations of the Chinese *Renminbi*. Furthermore, the threat of interest rate hikes by the United States Federal Reserve looms large. In addition, in many advanced nations, a narrative of secular stagnation, a condition of negligible or no economic growth in a market-based economy, has emerged over the past decade or so. Given this, there is a sizable risk that emerging markets may, over time, follow in the footsteps of Latin American nations such as Argentina and Venezuela and become 'submerging' markets, and face their own secular stagnations. Against this backdrop, we ask the following questions:-

- Beyond greater capital mobility and cheap capital, what other macro and market conditions are most conducive to the rise of innovation and, subsequently Creative Disruption?
- In light of recent domestic and economic headwinds, how likely are Emerging Markets to become 'Submerging' Markets?
- What is the role of innovation and Creative Disruption in preventing Emerging Markets from regressing to a weaker economy and preventing secular stagnation?

Session 2: Firms and Transformation – Learning to Fish: How do Firms Harness Creative Disruption?

Research has shown that while companies must strive for *market-creating innovations*, they must also undertake *performance-improving* and *efficiency innovations* to flourish. Firms must constantly reflect backwards, attending to the products and processes of the past while also looking to the future, seeking for innovations that will propel it moving forward. This reflects what Michael Tushman, an organisational theorist at the Harvard Business School, describes as an “ambidextrous organisation” which “requires executives to *explore* new opportunities even as they work diligently to *exploit* existing capabilities.” The challenge for Malaysian firms is to simultaneously be both good “exploiters” and good “explorers”. However, as Tushman acknowledges, this is not a straightforward proposition: “...many CEOs view the competing demands of the core businesses and the new units as a set of trade-offs to be made.” Under pressure from a board that demands constant returns, how do CEOs justify investments in riskier long-term innovation propositions?

This issue is further compounded by the fact that freer capital flows globally have led to hot money and short term portfolio flows in many capital markets. This skews the goals of businesses towards generating short-term returns for fear of impatience by investors to take long positions. Indeed, Michael Porter argues that, “The single-minded pursuit of shareholder value, measured over the short term, have been enormously destructive for strategy and value creation...[This] has focused managers on the wrong thing when they should really be focusing on creating economic value sustainably over the long term.” He highlights a further failure in global capital markets in which capital markets across the world tend to be copycat capital markets. He contends that there is a tendency for stakeholders in the capital markets to identify winners, after which all other companies in the industry would be pressured to replicate what the ‘winner’ or current industry darling is doing.

Against this backdrop of greater incentives for short term measures versus riskier long-term yet innovative investments, what should firms do? One approach would be to “fire bullets, then cannonballs.” This means that companies launch low cost, low risk and low distraction experiments before making big bets⁵. Another approach could be ‘leapfrogging.’ In this context, firms or even individuals ‘leapfrog’ existing challenging circumstances by going over rather than going through these circumstances. For instance, if corrupt middle-men are hindering the relationship between farmers and consumers, mobile phone technology can bridge the information gap in agriculture distribution. Against this context, the panel seeks to answer the following questions:-

⁵ For more, see the 2011 book, “Great by Choice: Uncertainty, Chaos and Luck – Why Some Thrive Despite Them All” by Jim Collins and Morten T. Hansen.

- How do firms prepare themselves to both harness Creative Disruption and prevent being disrupted?
- To what extent does the pressure to provide immediate returns – measured by TSR – reduce a firm’s ability to undertake innovation, which is more long-term in nature?
- Under pressure from the need to generate constant short-term returns, how do CEOs justify and undertake investments in riskier long-term innovation propositions?

Session 3: Growth and Development – The Innovation Economy Won’t be Built in a Day: What Should Policymakers and Players Do?

We have posited that countries grow and economies undergo structural change by producing different things, not necessarily more of the same things. A natural question to ask, therefore, is what is the role that the state, via its public policymakers, should take in harnessing Creative Disruption for its economy, such that it has the capacity to produce new things? Economists Ha-Joon Chang, Dani Rodrik and Ricardo Hausmann have long argued the case for the role of the state in the economy, particularly industrial policy. Research by Dani Rodrik distinguishes industrial policy as a process of discovery – one where firms and the government learn about costs and opportunities, while engaging in strategic coordination. Rodrik argues that the right question is not so much whether a government should try to pick winners, but whether it has the capacity to let the losers go. This is corroborated by Ha-Joon Chang, who argues that, ‘If we remain blinded by the free-market ideology that tells us only winner-picking by the private sector can succeed, we will end up ignoring a huge range of possibilities for economic development through public leadership or public-private joint efforts.’

More broadly, the state – in collaboration with the private sector – also has a major role in building the institutions of its nation as well as the regulatory environment of its economy. These tasks, if left solely to the private sector, will likely succumb to conflicts of interest and lobbyist-funding. The curation of institution-building and regulatory-enhancement must thus be done by the state as these issues tie in strongly with a nation’s identity. Indeed, Rodrik argues that, in designing ‘Capitalism 3.0,’ countries have the right to protect their own social arrangements, regulations, and institutions though they do not have the right to impose their institutions on others. The state has to, therefore, undertake the difficult task of developing its institutions and regulations to optimally harness Creative Disruption while simultaneously balancing the need to protect its national interests, culture and society. Against this backdrop, the panel seeks to discuss the following issues:-

- To what extent should policymakers engage with and provide support for, but not crowd out, the private sector to decide on new innovative industries to drive economic development?
- Given that new industries tend to be more risky and thus more likely to fail, how should national stakeholders bear the financial/fiscal costs of implementing new industries?
- What sort of institutional arrangements and regulatory environments are most conducive to harnessing Creative Disruption, without destroying national identity and society?

Session 4: People and Leadership – The *Yin* and *Yang* of Inclusive Innovation: Balancing Adventure with Ethics

Ultimately, the ones who will harness and undergo the adventures and ethical dilemmas of Creative Disruption will be *people*. As we have seen, the exponential evolution of innovation simply means that the world will become more uncertain and, potentially, more volatile. Yet, as always, in uncertainty lies opportunity. Thus, it is those people who are most imbued with the spirit of Adventure who will best grasp these opportunities. Throughout history, the spirit of Adventure has been required for all ventures and innovations. Consider the case of the Portuguese voyagers, led by Bartolomeu Dias, who navigated uncharted waters around the Cape of Good Hope to discover an ocean route to India. Or the case of Marie Curie, a two-time Nobel Prize winner, who conducted pioneering research on radioactivity that is now pervasive in our lives today. Or the case of Microsoft and Facebook, with their founders dropping out of university to pursue their innovative ventures. Whether driven by profit or by intellectual curiosity or by a desire to do good, the point remains: Adventure was a critical component of their individual journeys to innovate.

Yet, on the other hand, there is an ethical component to innovation – perhaps the most important issue of all. History is littered with unfettered adventurers causing destruction to nations, societies and people. Examples include Belgians setting up purely extractive institutions in the Congo, the creation of financial products such as Collateral Debt Obligations prior to the 2008 Financial Crisis, and the construction of weapons of mass destruction. The key, therefore, to harnessing Creative Disruption is to balance the spirit of Adventure with the notion of Ethics. This is perhaps best captured in the movie Jurassic Park where chaos theorist Dr. Ian Malcolm (played by Jeff Goldblum) registers his disapproval of the genetic engineering that produced dinosaurs. Specifically, he says, “Yeah, yeah, but your scientists were so preoccupied with whether or not they could that they didn’t stop to think if they *should*.” This is particularly poignant in the era of widespread innovation and invention.

The ability to create and change things has never been so accessible to so many. In weighing the value of products and processes, it is also critical to consider their potential exploitation - the case of ‘drones’ is illustrative of this. Thus, all stakeholders who participate in the economy and society must consider the issue of ethics in anything they desire to create, innovate or disrupt. Perhaps the most important principle of all is this: whatever we create, innovate or disrupt, in a world where we are now increasingly limited only by our imagination, we must also be limited by our conscience. Towards this end, the panel considers the following questions:-

- For a society to succeed In Harnessing Creative Disruption while Unlocking the Power of Inclusive Innovation, how do we balance the spirit of Adventure – so crucial to undertaking new, innovative pursuits – with the notion of Ethics?
- What are the contemporary ethical issues in harnessing Creative Disruption?
- What can leaders do to ensure that the benefits of Creative Disruption are disseminated to society while managing its downsides, and thus, unlock the power of Inclusive Innovation?

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