



DEBUGGING UNCERTAINTY

**Lessons from the Grasshopper
and the Ant on Living with Risk**

DAY 1 : SESSION SUMMARIES

DAY 1 - 6 October 2025

KEYNOTE ADDRESS

09:50am - 10:35am

Rising to the Challenge of an Age of Uncertainty

Uncertainty cannot be eliminated but only managed with humility about what we don't know and imagination for what we can't yet see.

We live with two main kinds of uncertainty: chance- and knowledge-based. A fair coin before it is flipped is chance; once it is flipped but covered, it becomes a question of knowledge, since the outcome is already decided. In both cases, one might assume that the chance of heads is 50-50, yet assumptions matter: even simple situations rely on judgement, as shown when the "coin" turned out to be a unique coin with tails on both sides.

Words blur risk; numbers clarify it – particularly when mapped transparently. Spiegelhalter warned that phrases such as "a fair chance of success" can mislead decision-makers. Defining probabilities numerically turns vague confidence into measurable judgment, prevents overconfidence and anchors trust in evidence. For example, intelligence services now use numerical ranges for verbal terms (e.g., "likely" refers to 55-75%), ensuring consistency and accountability.

Today's uncertainty is amplified by information ecosystems (social media/AI). The collapse of traditional news and the rise of algorithm-driven feeds have made information unpredictable and fragmented. Large language models and social media dynamics spread confident claims without conveying uncertainty, becoming just an extra noise.

Better decisions come from humility, diversity of views, and resilience, not optimisation.

Disagreements should be exposed rather than enforcing consensus. When assessing the Abbottabad raid, Obama was provided a full range of estimates by various intelligence heads rather than a single figure. Decision-makers need to see this spread to grasp the real uncertainty, recognise model risk, and counter groupthink: something best reinforced through deliberate use of red teams.

Calibration should be trained while overconfidence should be punished. Using Brier-score logic (squared-error loss) helps discipline judgement by heavily penalising confident mistakes while rewarding accurate, well-calibrated forecasts. Over time, this approach encourages analysts to express probabilities honestly and resist the temptation to sound more certain than the evidence allows.



INTRODUCER

Suhana Dewi Selamat

Head, Governance, Risk & Compliance,
Khazanah Nasional Berhad

"We're into the era of unknown unknowns where we don't even know what we don't know. What do we do? We need humility to admit we don't know things and imagination to try to think of what might happen. We'd love to try to convert the unknown unknowns into the known unknowns."

"We live in a world of uncertainty. We do like it, and we embrace it. That's what makes us human... Can you imagine living in a world that was certain? It'd be like the worst sort of prison."

"Question your assumptions all the time – somebody might be trying to fool you."



SPEAKER

Prof Sir David Spiegelhalter,

Emeritus Professor of Statistics,
University of Cambridge

Systems should be designed for resilience in face of “expected surprises”. In conditions of deep uncertainty where even the range of outcomes is unclear, highly optimised systems can easily fail. Real preparedness comes from maintaining flexibility and redundancy, encouraging dissenting views to test assumptions, and using imaginative scenario planning. The UK Ministry of Defence, for example, employs science-fiction writers to help broaden strategic thinking.

Risk should be communicated with trustworthiness, balance, and provisionality.

Trust must be earned, not asked for. Institutions should demonstrate trustworthiness – informing rather than persuading. This involves presenting balanced upsides and downsides, disclosing uncertainty and evidence’s quality, and pre-bunking likely misunderstandings.

Communication must fit the situation and be clear about change. In a crisis, John Krebs’ five-step approach works best: 1) explain what is known, 2) what remains unknown, 3) what actions are being taken, 4) what people can do in the meantime, and 5) make it clear that advice will evolve as new information emerges.

Uncertainty should be quantified whenever possible, but one must also acknowledge what cannot be modelled. Tools such as fan charts (which show central probability ranges while leaving a residual “other” category) help communicate limits honestly and remind decision-makers to plan for unknown extremes, which formal risk registers often overlook.

CORE SESSION 1: MACRO AND MARKETS 10:40am - 11:40am

Is There Light at the End of the Tunnel?

ASEAN's slowdown marks the end of resilience and the start of transformation.

U.S. exceptionalism has long anchored global growth, but its future is uncertain. A unique mix of innovation, openness to global talent, and the U.S. dollar's status as the world's currency of trust has given America both economic and capital dominance. Yet the foundations of this privilege are beginning to shift due to changing attitudes toward immigration, corporate responsibility, and global engagement.

ASEAN's structural growth has clearly shifted. ASEAN's GDP annual growth has slowed from 6% in 2000 to around 4% today, coinciding with China's WTO accession and a decline in manufacturing intensity. The drag stems from weaker capital accumulation and total factor productivity growth amid difficult external shocks like Brexit, trade wars, and the pandemic.

Foreign direct investment is now emerging as a key catalyst for renewal. Despite headwinds, ASEAN's recent growth has been supported by investment recovery and new FDI flows into advanced electronics, EVs, and data centres. Neutrality has become a comparative advantage for attracting diversified capital.

China's model is entering a new phase of outward-looking innovation.

China is moving beyond the old Made in China 2025 model. After years of local government-driven competition that created excess capacity, Beijing is pivoting toward "anti-involution" – discouraging redundant investment and rebalancing towards sustainable, demand-led growth.

A new phase of globalisation is emerging, led by China. For the first time, Chinese firms are expanding overseas as growth drivers shift from domestic competition to external markets. This includes strategic investments in ASEAN to access global demand while mitigating trade frictions with the US.

Differences in investment motivations are reshaping global capital flows. Western FDI has largely been driven by labour-cost arbitrage, seeking efficiency and margin gains through offshore production. In contrast, Chinese FDI is increasingly motivated by access to new markets, technology transfer, and deeper understanding of local enterprises - signalling a strategic shift from cost competition to capability building.



MODERATOR

Mohamed Ridzuan Mohamed

Director, Research,
Khazanah Nasional Berhad

"If the last 10 years for ASEAN has been about resilience and dealing with challenging external environment, I think the next 10 years will be about transformation. [...] ASEAN could see a renaissance of re-industrialisation."



SPEAKER

Allen Ng

Group Head & Principal Economist,
ASEAN+3 Macroeconomic
Research Office (AMRO)

ASEAN is at the crossroads of two giants - neutrality as an advantage towards harnessing growth.

ASEAN is navigating great power competition at the heart of global capital realignment. ASEAN sits at the epicentre of the next phase of global capital flows as China exports not just goods but capital. The region's neutrality and demographic scale make it both a buffer and beneficiary of US-China realignment.

Intra-regional integration is now essential to harness these tailwinds. To harness these tailwinds, ASEAN must deepen intra-regional FDI and build regional champions beyond banks that integrate regional markets and consumer bases (e.g., Mr. DIY, Jollibee).

Balancing opportunity with social adjustment will be the key challenge. Chinese FDI is already reshaping industries from nickel to apparel. The challenge for ASEAN lies in cushioning the socioeconomic costs of disruption while upgrading domestic value chains and pursuing coordinated industrial policies to ensure inclusive gains.

"Exceptionalism, in many ways, is a privilege, not an entitlement... Whether that exceptionalism can continue really remains to be seen."



SPEAKER

Kevin Bong

Managing Director and
Head of Portfolio Design & Construction,
Total Fund Management,
CPP Investments

"While manufacturing sector creates value, it is the service sector that distributes value among everyone. This is where more opportunities would exist not only for China, but also for every other country that is investing in the service sector."



SPEAKER

Shan Guo

Partner,
Hutong Research

DAY 1 - 6 October 2025

SPECIAL SESSION:
11:45am - 12:30pm

Investment Portfolio Management

Portfolio resilience requires balancing both systematic and systemic risk

True resilience requires recognising both the measurable and the unimaginable. Investors are conditioned to manage systematic risk through Strategic Asset Allocation (SAA). Case studies such as Kodak's downfall and Fujifilm's reinvention highlight another form of risk known as systemic risk which arise from structural changes that typically lay beyond our control, e.g. technological acceleration, geopolitical tension, and macroeconomic headwinds.

Managing both risks demands imagination and agility. Institutions must play the dual role of the ant and the grasshopper: prudent enough to manage known risks, yet imaginative enough to seize new opportunities before systemic shifts turn defensive postures into liabilities.

Modern Portfolio Theory (MPT) offers structure, but struggles with today's interlinked shocks. While the principles of diversification remain foundational, its assumptions of stable correlations and normally distributed risks collapse during systemic events, demanding imagination, humility, and adaptability beyond the model.

Transitioning from SAA to Total Portfolio Approach (TPA) depends as much on mindset and incentives as on models.

TPA connects everything under one framework. It helps organisations see how different parts of the portfolio interact, instead of managing each asset class in isolation. This "whole-of-fund" view—turning many frozen "ice cubes" into one fluid "glass of water"—enables faster, better decisions and a more agile response to major shifts.

Successful transition requires culture before structure. Many organisations fail not because their models are wrong, but because their people are not ready to change. Moving to TPA starts with shifting mindsets – encouraging teamwork, curiosity, and openness to take calculated risks.

Execution should follow a "crawl-walk-run" approach. The shift to TPA should be a gradual process of experimentation, learning, and scaling, instead of an overnight overhaul. Starting small with pilot strategies allows organisations to learn from setbacks.



MODERATOR

Hisham Hamdan
Chief Investment Officer,
Khazanah Nasional Berhad

"I think that Management 101 has sometimes blinded us as we only see what's immediately in front of us. Thinking more holistically about risk is about taking a broad approach to risk, taking those blinders off."



SPEAKER

Jayne Bok
Head of Investments, Asia,
Willis Towers Watson (WTW)

DAY 1 - 6 October 2025

In both investing and life, the greatest risk lies in taking none at all.

Institutions should focus not only on avoiding Type 1 errors (mistakes of action) but also on recognising Type 2 errors (mistakes of inaction). The latter often cost more over time given the accumulation of missed opportunities and diminished relevance.

Fundamental purpose must be defined to create sustained value, beyond beating short-term benchmarks or metrics. Incentive structures should extend across at a long-term horizon to reward risk-taking, long-term conviction, and counter-consensus thinking.

Progress comes from “risking wisely”. This is done by balancing prudence with imagination, systems with experimentation, and governance with the courage to act despite uncertainty.

“You need incentive structures that encourage people to have enough courage to be bold – to go out of consensus, hold those positions when they’re out of favour, and be rewarded in the long term”



SPEAKER

Dr Mark Machin

Founder & Managing Partner,
Intrepid Growth Partners

DAY 1 - 6 October 2025

CORE SESSION 2: FIRMS AND TRANSFORMATION 2:00pm - 3:00pm

The Macro Micro Mismatch in ASEAN

ASEAN's growth story is strong, but its investment story remains incomplete.

Market fragmentation limits scale and cross-border capital flow. Even combined, ASEAN's exchanges are only the size of Hong Kong's and one tenth of NASDAQ's, restricting investor confidence and liquidity. Deep integration across regulations, talent, and financial markets is critical to attract institutional capital and unlock regional growth.

Regional integration must extend beyond ASEAN itself. True market depth will come from connecting ASEAN northward to China, Japan, and Korea, and southward to other emerging hubs. Broader connectivity will provide the scale and visibility needed for global funds to view ASEAN as a cohesive investment destination.

Credit innovation must evolve for modern businesses. Traditional collateral-based lending excludes growth companies without fixed assets. Cash flow-based financing, digital credit solutions, and hybrid models are essential to bridge the funding gap for early-stage and technology-driven corporations.

From "Made in ASEAN" to "Made by ASEAN", the next take-off depends on developing local champions.

Historical FDI trapped value within MNC headquarters. Past investment waves positioned ASEAN as a production base, exporting profits and innovation back to foreign HQs. Future strategies must focus on technology transfer, IP ownership, and domestic value capture to prevent another cycle of external dependency.

Local champions need government support as early customers. GLCs and state entities can accelerate domestic champions by acting as anchor clients, offering procurement opportunities and patient capital. This early customer effect enables firms to scale regionally while retaining ownership and know-how at home.

Policy reform must prioritise R&D over CapEx. Current incentives reward factory expansion and job creation but overlook innovation spending. Redirecting fiscal support toward R&D, IP generation, and technology adoption is vital for ASEAN to climb the global value chain.



MODERATOR

Vishal Agarwal

Co-Head, Private Markets and Head,
Southeast Asia/South Asia,
Khazanah Nasional Berhad

"We as a country have missed out on big opportunities... but I think now is the time to change. We need to capitalise and seize what I see as a once-in-a-generation opportunity."



SPEAKER

Dato' Chu Jenn Weng

Co-Founder, President & Group CEO,
ViTrox Corp Berhad

DAY 1 - 6 October 2025

Building ASEAN's innovation ecosystem demands coordinated policy, entrepreneurial mindset, and exceptional support.

Ecosystem building requires a systemic government approach. China's coordinated transformation from curriculum reform to industrial incentives shows how ecosystem depth is built. ASEAN governments must similarly align education, policy, and private sector participation to foster innovation at scale.

Universities must realign toward entrepreneurship. Most ASEAN graduates are trained to seek employment in large firms rather than to build new ones. Embedding entrepreneurship, problem solving, and risk taking in education is key to nurturing the next generation of founders.

Exceptional support is needed to grow regional unicorns. Emerging champions cannot thrive under one size fits all policies. Governments should make targeted exceptions, offering bespoke incentives, flexible regulation, and capital access to fast-track high potential companies into global contenders.

"If you don't take risks, you'll never know what's possible. Building unicorns requires exceptions. You can't have cookie-cutter rules for everyone."



SPEAKER

Jenny Lee
Senior Managing Partner,
Granite Asia

"Fostering higher levels of integration within ASEAN is important. This would allow us to move both financial capital and human capital more freely, consolidating our regional markets."



SPEAKER

Novan Amirudin
Group CEO,
CIMB Group Holdings Berhad

SPECIAL ADDRESS

03:10pm - 03:50pm

Navigating global uncertainty requires discipline, foresight, and credible governance.

The world today is caught between competing visions of order.

Intensifying geopolitical rivalry, protectionism, and economic nationalism disrupt the global system. Once the bedrock of shared prosperity, the multilateral trading system is now in a state of paralysis.

Malaysia must “sail on the rough seas of discord” with composure and clarity. Even though storms or uncertainties cannot be predicted, the ship or the country can still be strengthened in face of adversity.

Fiscal prudence, transparent procurement, and targeted reform are cornerstones of resilience. When built on sound governance, growth is not only sustainable, but every ringgit of public money is also spent with purpose.

Governance is the moral compass that turns risk into innovation.

Risk is an enduring feature of human progress. From the Asian Financial Crisis to the COVID-19 pandemic, risk humbles and reminds humanity of their limits. Yet it also invites imagination and courage.

When rooted in integrity, governance ensures that risk does not become “a license for recklessness” but a driver of reform and renewal. What distinguishes thriving nations from failing ones is the ability to turn uncertainty into opportunity.

Governance is not a bureaucratic concern but rather the moral compass of the state. Institutions such as Khazanah Nasional must reflect this philosophy of stewardship, investing not only for commercial returns but also for national advancement.

“The world has entered an age where power is not only measured by military might or market size, but by credibility – the capacity to be trusted, to offer stability when others choose confrontation. Malaysia's task is to remain a reliable partner in such a volatile world.”

“The MADANI framework represents a conviction that prosperity cannot come at the expense of humanity. The economy is not an end in itself. It is a means to secure the well-being of our people.”

“Amid the turbulence of our time, we must hold on to what truly matters. In the face of injustice, we must speak with moral clarity. In the face of economic uncertainty, we must act with prudence, courage and resolve. And in the midst of division, we must hold fast to unity.”



YAB Dato' Seri Anwar Ibrahim
Prime Minister of Malaysia

National renewal demands the union of competence and conscience.

Economic development must be guided by dignity, equity, and compassion. Social justice should not end up favouring the rich and burdening the poor.

Economy is not an end in itself but rather a means to secure the well-being of the people. This aligns with the MADANI framework that prosperity does not come at the expense of humanity. Investing in education, for example, is not merely about building skills but to build citizens of the world.

The essence of national renewal is to marry competence with conscience and to balance markets with mercy. Reforming governance is not only to fight corruption but restore trust. Additionally, attracting investors is not only to seek capital but invite confidence in Malaysia's moral and political direction.

DAY 1 - 6 October 2025

FEATURE ADDRESS

04:15pm - 05:00pm

Opportunities and Challenges in AI Age

AI is driving a new industrial revolution

The pace of AI adoption is accelerating at an unprecedented rate. Token generation is doubling every month, and it is likely that the world still underestimates the profound impact AI will have over the next ten years.

AI is transforming industries across the board. AI is a horizontal technology that enhances productivity across all sectors. For example, China's DeepSeek breakthrough is already delivering improvements in healthcare across the country.

AI is powering a new industrial revolution through modern infrastructure. Just as automobiles, oil, and factories powered previous industrial revolutions, today's wave of global transformation is being driven by semiconductors, electricity, and AI factories. These building blocks, especially data centres and GPU-powered infrastructure, now underpin the growth of AI across industries.

Value creation is shifting from 'bits' to 'atoms'

Hardware is the more valuable frontier. While software, large language models, and AI applications continue to drive digital innovation, true value creation increasingly lies in the *physical backbone of intelligence*—GPUs, networking systems, robotics, and clean energy infrastructure. The future of AI depends not just on algorithms, but on the physical infrastructure that powers them.

Hardware is proving far more capital-efficient than expected. Internet companies required hundreds of millions of dollars to scale amid fierce competition and inflated valuations, whereas deep-tech and hardware firms face fewer competitors, clearer moats, and more sustainable economics.

China's experience illustrates this shift to hardware clearly. China's experience illustrates this shift to hardware clearly. Over 200 China public listed unicorn deep-tech and climate-tech firms have created more than US\$1 trillion in market value, often with just a fraction of the funding that internet peers raised. Investments in robotics, nuclear fusion, and brain-computer interfaces reveal how "atoms" now anchor both economic and societal progress.



INTRODUCER

Kenneth Woo

Head, North Asia,
Khazanah Nasional Berhad

"Encourage empathy and the connection to people. That's what makes us different from AI – it could be super-intelligent down the road, but our humanity is what sets us apart."



SPEAKER

James Mi

Founding Partner,
Lightspeed China Partners

Competing in the AI age requires efficiency, adaptability, and humanity

The most competitive organisations deploy AI resourcefully. Successful integration is a combination of integrating *private data* to sharpen insights, using *multiple models* to avoid dependency, and leveraging *open-source systems* to reduce experimentation costs. Strategic flexibility, not scale alone, defines success.

The challenge ahead is in energy. OpenAI's projected power demand could exceed Malaysia's current power capacity by 2031, underscoring the urgency of climate-tech and energy innovation to sustain AI growth.

Human qualities remain essential in an AI-driven world. Even as AI reshapes knowledge work, *human curiosity, empathy, and critical thinking* remain irreplaceable. These traits ensure that AI augments human potential rather than replaces it, keeping innovation anchored in purpose and human connection.

DAY 1 - 6 October 2025

INNOVATION WITHOUT BORDERS: Science, Technology and Innovation in Malaysia and Beyond

5:05pm - 6:25pm

Ongoing data centre expansion will help support future products.

Exponential data centre growth is constrained by power availability.

Data demand is rising faster than hardware efficiency, creating an insatiable need for power-intensive data centres. The limiting factor today is not technology but electricity supply. Applications like AI training and AI inference will demand more computing load that will drive further infrastructure growth.

Expansion and faster internet speed coincide with ability to develop bigger applications. Faster internet speeds have enabled entirely new applications, from search and streaming to AI and autonomous vehicles. Each leap in connectivity has spurred larger data needs, which necessitate larger data centre facilities.

Locally built data centres are essential. Data localisation is essential because it belongs to local customers and is not the data of foreign firms. Many applications depend on ultra-low latency, requiring data centres to be close to users for security and responsiveness.

Innovative catalyst transforms plastics and biomass into high-value chemicals

Traditional plastic recycling has numerous issues limiting its application. Conventional methods like pyrolysis and mechanical recycling are energy-intensive, expensive, toxic, and limited to certain clean plastics. They emit poisonous gases and produce low-value hydrocarbons while failing to process mixed or contaminated waste. Thus, only 9% of global plastic has ever been recycled.

A non-metal, non-toxic and cost-effective catalyst will not merely recycle but upcycle plastics. Dr Kong's breakthrough photocatalytic method decomposes plastics within one day under room temperature and atmospheric pressure using only light, oxygen, and a non-metal catalyst. It can upcycle a wide range of plastic, including mixed or contaminated plastics and produce high-value chemicals.

This technology can be applied to other types of waste. The same catalyst can depolymerize even biomass, nitrile gloves and hospital thermoplastic shells, serving industries from pharmaceuticals to clean energy.



INTRODUCER

Bahariah Bahadom

Senior Vice President, Strategy,
Khazanah Nasional Berhad

"Moore's Law dictates that processing power will increase every two years [but] the demand that society is putting on data centre servers is actually growing at a pace much faster than Moore's Law."



SPEAKER

Hossein Fateh

Founder & CEO,
Cloud Capital and CloudHQ

"Instead of producing recycled plastics, we break the polymers back to their monomers. We view this technology as a plastic upcycling instead of plastic recycling because we add value to the products."



SPEAKER

Dr Kong Xin Ying

Lee Kuan Yew Research Fellow,
Nanyang Technological University
Singapore

Urbanmetry's data-driven approach enables smarter, demand-led city and transport planning.

There are too many known unknowns with urban data. Reliable data on population growth, income, and supply trends is scarce. Therefore, local urban planners and developers often rely on gut instinct from personal experiences, but that approach is not scalable when operating across multiple regions.

Urbanmetry helps property developers identify high-potential areas. The company analyses migration patterns, population movements, and consumption data to show how people move and live, shifting decisions based on intuition to evidence. Their data also supports banks and city planners with predictive models that back-test accurately against real-world transactions.

Urbanmetry's solutions enable better public transport planning. Their model tracks user movement to simulate bus routes and predict ridership before implementation. This allows a "demand-led design" rather than Malaysia's traditional "build and hope they come" approach. By quantifying uncertainty, cities can be built to move people more efficiently.

Southeast Asia (SEA) can learn from Europe's entrepreneurial development.

SEA shares similarities with Europe but also advantageous differences. Both regions share complex, multilingual and multi-country markets. While Europe is challenged by low growth and ageing demographics, Southeast Asia's dynamic, youthful workforce and 700 million-strong digital population offer an advantage.

SEA needs to address the last three stages of the sustainable innovation ecosystem. While early-stage funding is strong, Southeast Asia still lacks growth capital, exit pathways, and experienced entrepreneurs who can recycle wealth and knowledge. Without domestic growth capital, founders grow slowly, go bankrupt, or sell too early. These gaps mirror Europe's past and must be ended to sustain innovation momentum.

Nurturing future unicorns needs collaborations in building the business ecosystem. Innovation demands tolerance for failure and acceptance of risk. With coordination and patience between universities, corporates, governments, and politicians, Malaysia could become a regional innovation hub linking Europe and Asia.

"Malaysians have been doing supply-led design for many years, but technology has enabled demand led design. Using our destination heat map, powered by mobile data that we track, we built a model that helps predict [bus] ridership before [city planners] even put up a bus."



SPEAKER

Koh Cha-Ly
Founder & CEO,
Urbanmetry Sdn Bhd

"It takes an ecosystem to build a unicorn. It requires collaboration between the best universities, the largest corporates, the most ambitious governments and politicians to bring about significant change that will allow these entrepreneurs to be more successful on the global stage."



SPEAKER

Hugh Campbell
Co-Founder & Partner,
Bullhound Capital