SUMMARY REPORT DOCUMENT

Tri Hita Karana G20 Bali Global Blended Finance Alliance Dialogue "New Era Bali Kerthi Roadmap: Quantum AI, Innovation and Blended Finance for Better Business Better World"

Friday, June 20th 2025

Breakout Workshop 2:
"Center of Future Knowledge: Creating Knowledge, Innovation and Technology Hub"

Introduction

In an era of rapid tech change and climate uncertainty, the Center of Future Knowledge (CFK) stands as a hub for innovation and a sanctuary for conscious, ethical transformation. Rooted in Tri Hita Karana values, harmony between people, planet, and the spiritual, CFK invites global collaboration to shape a future where innovation, AI, quantum tech investments uplift not just economies, but collective well-being. This is a call for the New Era Bali Kerthi Roadmap: where knowledge becomes care, innovation aligns with nature, and technology serves humanity. CFK blends global innovation with local wisdom, preparing future leaders to be not just tech-savvy but deeply human, and reimagining Bali as a lighthouse of future literacy, where startups, policymakers, indigenous leaders, and technologists come together to co-create a better world. CFK is not a monument, but a movement for mindful innovation.

In this breakout group workshop, participants will explore the vision, challenges, bottlenecks, strengths, and opportunities in developing a vibrant digital ecosystem and shape their commitments to advancing this shared future.

<u>Context Setting by Government Patron</u>

The session commenced with **Mr. Edwin Hidayat Abdullah**, General of Digital Ecosystem, Ministry of Communication and Digital Affairs sharing Indonesia's vision on its digital future. He highlighted that Indonesia's digital economy is growing rapidly, currently contributing USD 90 billion per year (about 6–7% of total GDP), with projections reaching USD 360 billion annually by 2030. Yet despite this growth, several key challenges remain namely talent gap and investment needs. In terms of talent gap,an

estimated need for 9 million digital talents, with a current shortfall of 2–3 million, whereas in terms of investment needs, significant upgrades in digital platforms and connectivity are required.

Adopting emerging technologies, especially AI, is also a priority. While Indonesia adopted a national AI strategy in 2020, the field has advanced quickly. New regulations, including a Presidential Decree on AI adoption and ethics, are being drafted to ensure safety and security. To support this growth, Indonesia needs innovation hubs to serve as the backbone of the digital economy. The government is developing national and regional hubs in Jakarta, Yogyakarta, Surabaya, and Bali, which is particularly well-positioned for such a role.

Within this vision, Kura Kura Bali (KKB) as a Future Knowledge Special Economic Zone is an ideal site to house a digital innovation center. It can foster global partnerships through (1) Start-up friendly sandboxes, (2) Soft-landing programs for international players (3) Integration with the national digital innovation ecosystem. Overall, this presents vast potential for collaboration and positions Bali as a key node in Indonesia's digital future.

Steven Seng, Chief of Subsidiary Operations, Kura Kura Bali

In addition to the context-setting provided previously by Mr. Edwin Hidayat Abdullah, additional context to enhance the discussion is provided by **Mr. Steven Seng,** Chief of Subsidiary Operations of Kura Kura Bali Special Economic Zones. He shared the foundational value of Kura Kura Bali itself and how it has potential to be replicated across Indonesia.

Kura Kura Bali (KKB), a designated Special Economic Zone, offers a unique model where culture and innovation are co-created, guided by the Balinese philosophy of Tri Hita Karana. Its development focuses on sustainability, interconnectedness, and balance between tradition and transformation. Aligned with the New Era Bali Kerthi Roadmap, KKB aims to help Bali transition from dependence on mass tourism toward innovation-driven sectors that reflect spiritual and ecological values. Central to this is the planned Knowledge District: an environment where local wisdom guides global innovation, and technology serves humanity.

The KKB ecosystem integrates the UID Bali Campus, Innovation Labs, Knowledge Tech Park, and a full range of collaboration and networking facilities, designed to foster skills development, entrepreneurship, and meaningful innovation. KKB represents a compelling case study for national replication, offering a model for building innovation hubs grounded in local culture while advancing global technological progress.

Discussion Summary

Discussion 1: Envisioning the Future

What does a thriving digital ecosystem look like, and what values should it be built upon? What core mission and goals should guide the development of a digital ecosystem that truly serves people and the planet? How can digital ecosystem development also support broader priorities such as economic resilience, social inclusion, and environmental sustainability? In what ways could a strong digital ecosystem help transform and connect key sectors (government, academia, and industry) to foster innovation and collective progress?

1. **Foundational Values and Inclusivity**
   Prof. Dr. Ir. Tatacipta Dirgantara, M.T. (Rector, Institut Teknologi Bandung) and Prof. Song Sen (Associate Professor, Tsinghua University) emphasized that a thriving digital ecosystem must enable inclusive, borderless communication, while staying grounded in local values. It should be built on trust, accountability, and environmental responsibility, with AI and emerging technologies used to empower rural communities. Equitable access and education are key to ensuring broad societal benefits.

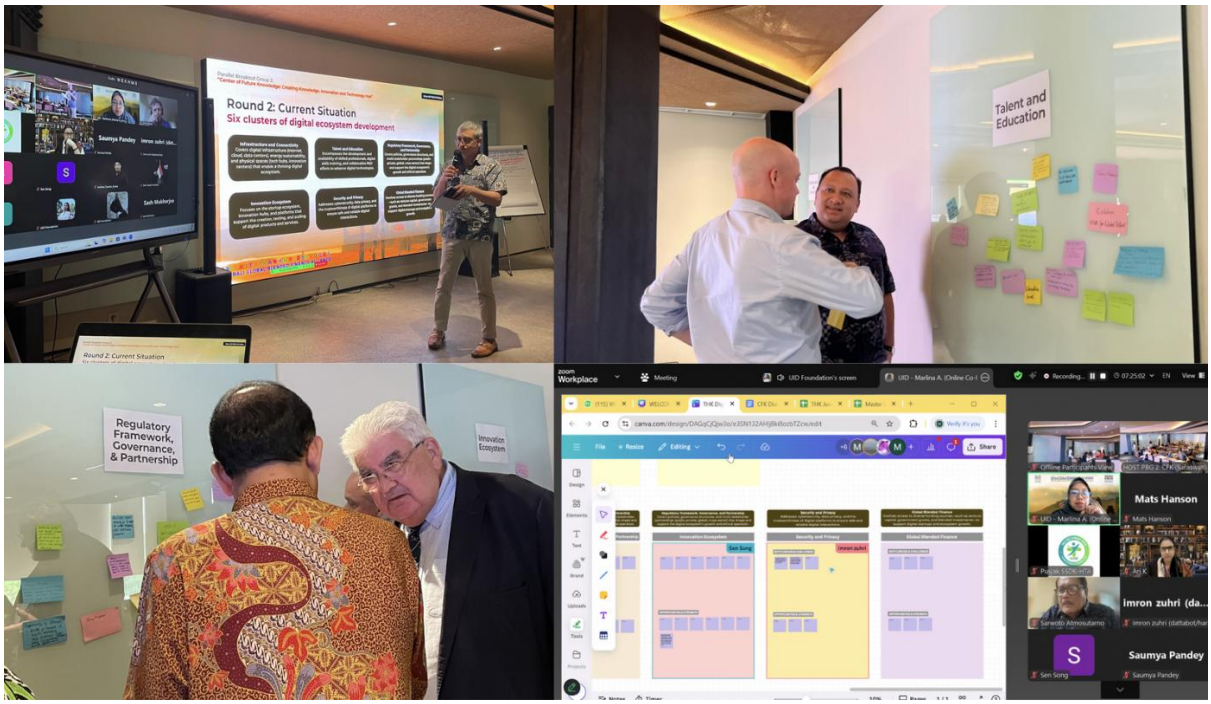
2. **Human Capacity**
   Monika Rudijono (Managing Director, Endeavor Indonesia) emphasized that a thriving digital ecosystem depends on the alignment of capital, technology, infrastructure, human capacity, and policy. The ecosystem must prioritize empowering people to meaningfully use and innovate with technology. She highlighted the importance of synergy across infrastructure, capital, and policy, and the need to continuously develop human capacity to drive sustainable innovation.

3. **Education and Knowledge Hub Vision**
   Mats Hanson (Head of Faculty, Tsinghua South East Asia) highlighted a vision for Kura Kura Bali (KKB) as a regional Knowledge District, positioning Indonesia as a future knowledge hub. Leveraging ICT and AI in education was seen as essential to achieving Indonesia's 2045 goals and cultivating talent for sustainable development.

4. **Youth Perspective on the Future**
   Youth participants called for a digital ecosystem that is sustainable, reliable, personalized, and inclusive, where everyone has a voice and opportunity to thrive. Reflecting on the pandemic's acceleration of digital life, they recognized the need for continuous evolution and bridging divides of age and income to ensure digital inclusion for all segments of society.

Discussion 2: Understanding Current Situation

What is the current situation, especially the challenge to make the vision of the future a reality? And what opportunities lay to address these challenges?



1. Infrastructure and Connectivity

Challenges:

- **Digital Ecosystem Disparity:** Current digital infrastructure is concentrated in large cities like Jakarta, leaving rural and remote areas underserved.
- **Concentration in Java:** There is a disproportionate focus on major cities, with limited expansion to outer regions.
- **Insufficient Data Centers:** Indonesia lacks adequate data centers to support growing demand, and even countries like the US, with over 5,000 data centers, still face challenges in meeting needs.
- **Internet Speed:** Indonesia ranks low in internet speeds globally, with mobile ranking **96/143** and fixed broadband at **122/182**, which hinders digital connectivity and online services.

Opportunities:

- **Leapfrogging Infrastructure Development:** Indonesia can build new, advanced infrastructure rather than only expanding existing systems, potentially leaping ahead in digital development.
- **Affordable Data Centers:** There is an opportunity to build cost-effective data centers aligned with Indonesia's economic capabilities, making digital infrastructure more accessible.
- **Model for Digital Cooperative Ecosystems:** Propose initiatives like **Koperasi Desa Merah Putih (KDMP)** at KITPark/THK Bali, integrating infrastructure, connectivity, tech talent, regulatory support, data security, and funding. This can serve as a model for regional and national digital cooperatives.

2. Talent and Education

Challenges:

- **Digital Literacy and Inclusion:** Digital technologies disproportionately empower the "strong" and marginalize the "weak." A key challenge is improving **digital literacy** and **digital economic competency** for all levels of society.
- **Mismatch Between Industry and Academia:** There is a gap between the skills taught in educational institutions and those needed in the tech industry, as well as a lack of practical learning and internships.
- **Access to Digital Education:** Many rural communities, including those near large organizations, lack access to digital infrastructure and the capabilities to learn or upskill in digital technologies.
- **Underdeveloped Research Investment:** Indonesia's R&D spending is low (0.28% of the national budget), limiting deep tech innovation and the country's competitiveness in tech development.

Opportunities:

- **Reskilling and Upskilling Workforce:** Leverage existing resources like Bali's global appeal to provide cross-border online courses and upskill the workforce.
- **Global Talent Recruitment:** Develop **Golden Visa** programs for attracting global talent to Indonesia, encouraging **brain circulation** and facilitating a knowledge exchange between local and international experts.
- **Inclusive Education Programs:** Implement inclusive capacity-building programs that align with industry needs and encourage **digital literacy** in all demographics, especially in underserved rural areas.
- **Practical AI and Digital Education:** AI education can be accelerated through **internship-based programs** and hands-on project learning led by industry experts.

3. Regulatory Framework, Governance, and Partnerships

Challenges:

- **Regulatory Misalignment:** There is a lack of synchronization between digital regulations, and government approval processes often involve too many levels of bureaucracy.
- **Risk of AI Biases:** There are concerns that the implementation of AI, especially in industries like healthcare, could be biased, due to lack of regulation on data sharing and training.
- **Slow Partnership and Collaboration:** Speed and efficiency in forming partnerships, especially between government, industry, and academia, can be slow, impeding innovation.
- **Fragmented Ecosystem:** Government procurement systems are often fragmented with siloed approaches, making it difficult to create a unified and strategic digital ecosystem.

Opportunities:

- **Simplified Regulation:** Streamlining regulatory processes to enable faster adoption of new technologies such as AI by both individuals and businesses.
- **Collaborative Governance Models:** Develop more effective governance frameworks that bring together all stakeholders—government, industry, and academia—to support digital innovation and infrastructure development.
- **AI Policy Development:** Formulate policies that guide **AI development** and **data-sharing practices**, ensuring transparency, fairness, and the responsible use of data in sectors like healthcare.

4. Innovation Ecosystem

Challenges:

- **Siloed Organizations:** Many innovation efforts are still fragmented, with organizations focused on short-term goals rather than long-term sustainable digital ecosystem development.

- **Limited Access to Global Talent:** Local hubs face challenges in attracting top-tier global talent due to limited investment and ecosystem development.
- **Policy Gaps:** There is still a lack of clear, coherent policies that foster innovation ecosystems, and many policies fail to keep pace with rapid technological developments.

Opportunities:

- **Investing in Local Innovation Hubs:** As the world's largest archipelago, Indonesia should invest in local innovation hubs to promote grassroots digital ecosystem development.
- **Sustained Investment in Innovation:** Secure both public and private investment to build long-term, resilient, and globally connected innovation hubs.
- **Citizen-Centric Innovation:** Focus innovation efforts on the needs of citizens, ensuring that the ecosystem creates real, accessible value for local communities.
- **Public-Private Collaboration:** Strengthen partnerships between government, private sector, and academia to promote shared knowledge and funding for long-term innovation.

5. Security and Privacy

Challenges:

- **Lack of Cybersecurity Awareness:** There is a widespread lack of cybersecurity knowledge and alertness, leaving individuals and organizations vulnerable to digital threats.
- **Weak Intellectual Property Protection:** Weak protection around intellectual property (IP) and data usage, especially in emerging technologies like AI, hinders innovation and international collaborations.
- **Decentralized Identity Roadmap:** Indonesia lacks a clear, actionable roadmap for implementing **decentralized identity** systems, which are essential for secure digital interactions.

Opportunities:

- **Enhanced Digital Security Infrastructure:** Investing in cybersecurity frameworks to protect digital infrastructure, including IP and personal data, as Indonesia continues its digital transformation.
- **Blockchain for Security:** Explore the use of blockchain technology to enhance data security and privacy in emerging sectors, ensuring trust and transparency in digital transactions.
- **Collaborations for Security Solutions:** Work with global tech firms and non-profits to strengthen Indonesia's cybersecurity and privacy infrastructure, ensuring international standards are met.

6. Global Connectivity and Finance

Challenges:

- **High Cost of Digital Infrastructure:** Building and powering emerging technologies, such as AI, will require significant investment—estimated at $1 trillion, far exceeding Indonesia's GDP.
- **Access to Digital Ecosystems for Villages:** Many rural areas, especially villages, lack awareness and access to the necessary infrastructure and ecosystem to participate in digital transformation.
- **Financial Barriers:** Indonesia's digital ecosystem suffers from a lack of focused financing for emerging technologies and start-ups in underserved sectors.

Opportunities:

- **Blended Finance Models:** Utilize **blended finance** mechanisms to attract both public and private funding for the digital ecosystem's development.
- **Global Collaborations for Development:** Collaborate with global non-profits and international partners to drive development efforts, using financial resources to bridge gaps in infrastructure and knowledge.

- **Public-Private Investments:** Encourage more foreign direct investment (FDI) and public-private partnerships to fund the digital infrastructure needed for emerging technologies.

Commitment

Each participant is given time to reflect from the discussion on several points as follow:

1. Challenge to Address
2. My Strength/Role
3. Action I Will Take
4. Who to Collaborate With

These reflections is building towards group's commitment,

"Our vision and commitment is to build a bold future where knowledge, technology, and humanity converge—committing our collective will and resources to co-create a Center for Future Knowledge that fosters prosperity, creates wealth, and uplifts both people and planet."