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Mr. Tidball (Secretary-General, LAWASIA and Chair of the Conference Organising Committee), Ms Pang (President of Law Society of Hong Kong), distinguished guests, ladies and gentlemen, good morning and welcome to you all.

2. I would like to start by thanking LAWASIA for organizing this conference which enables us to share ideas and knowledge in risk management and insurance for legal professionals in a global context, and particularly for allowing me the special honour of addressing our distinguished guests here this morning.

3. My Department supports sharing of legal knowledge and holding of this Conference in Hong Kong. The subjects to be discussed at this Conference are indeed very relevant to the work of my office, the Inclusive Dispute Avoidance and Resolution Office (IDAR Office) established by the Secretary for Justice earlier this year, which aims to further facilitate access to justice, inclusive growth and sustainable development, contributing to the United Nations Sustainable Development Goals, in particular, Goal 16 on “peace, justice and strong institutions”.

**Legal issues arising from the advancement of technology**

4. One important aspect of the work of my office is to consider how we might deploy modern technologies to further advance Hong Kong’s status as an ideal hub for deal-making and dispute resolution. This Conference will cover discussion on a wide range of issues concerning modern computer technologies. So it is fitting for me to share with you some of those issues and the work we do on those fronts this morning.

5. The advancement of computer technologies in recent decades has changed how we conduct our daily lives beyond all imagination. Just a few decades ago, most people were not familiar with the internet or how it works. Now most of us and the great majority of our businesses cannot go without it. Subsequent computer technological inventions, such as the smart phones, e-payment systems, social networks, have proven to be equally transformative to our lives. This is a simple, yet powerful illustration of the profound changes that the modern technology has brought to the human society in recent decades. More recently, a new wave of computer technological advancement has attracted extensive attention around the globe - Distributed Ledger Technology (DLT), Smart Contracts and Artificial Intelligence (AI) in the legal sectors.

### DLT

6. For DLT, many of you may know that DLT is a decentralized public ledger, duplicated across a network of computers, which is not controlled by any single entity. The ledger is regularly updated and the copies of it compared for consistency, so that it cannot be tampered with.<sup>1</sup>

7. DLT offers significant advantages. First, as it is run on a peer-to-peer platform, a DLT network has no central entity with direct access to users' private information. As such, it may reduce the risk of data leaks resulting from cyberattacks or human error in the centralized platform. Second, encryption can be used to protect data privacy on a DLT network. As such, nobody other than the holder of the decryption key is able to unlock the encrypted data.<sup>2</sup> Third, as a distributed log of records, there is greater transparency, making fraud and manipulation more difficult.<sup>3</sup>

8. However, there are many legal issues concerning DLT, such as:<sup>4</sup>

- (a) Application and enforceability of laws for cross border DLT networks;
- (b) Mechanisms for handling liability and dispute resolution if there is no centralized party administering a DLT network;

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<sup>1</sup> HK-Lawyer, Sept 2018, p 42

<sup>2</sup> HK-Lawyer, Sept 2018, p 42

<sup>3</sup> [www.bbva.com/en/difference-dlt-blockchain](http://www.bbva.com/en/difference-dlt-blockchain)

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<http://www.hk-lawyer.org/content/blockchain-technology-offers-potential-poses-privacy-and-laundering-risks-says-regulator>

- (c) Compliance with personal data protection principles in relation to data sharing and perpetual storage (for example, under most decryption regimes, data can only be retained for so long as they are needed for their function. So, if you have a system where data going back decades are maintained on a ledger in every computer that is connected to that ledger that you can see, you will have difficulties with complying with most of the decryption regimes) <sup>5</sup>;
- (d) Problems as regards conflicts of law between jurisdictions in insolvency proceedings- digital assets can be held and transferred in multiple jurisdictions. Consequently, all these jurisdictions could potentially be the jurisdictions for governing insolvency proceedings concerning the digital assets<sup>6</sup>; and
- (e) Propensity of DLT networks to be used for conducting sham transactions (such as money laundering and tax evasion) out of the fact that anyone can participate and transact in a DLT network without going through any prior identity check<sup>7</sup>.

### Smart Contracts

9. Building on DLT, smart contract has been developed as a special protocol intended to contribute, verify or implement the negotiation or performance of the contract without the interference of third parties in a traceable and irreversible manner.

10. A smart contract, among others, offers the following advantages<sup>8</sup>-

- (a) Autonomy- execution is managed automatically by the network, rather than by an individual who may make mistakes;
- (b) Trust- the contract is encrypted on a shared ledger. So, it cannot be misplaced or lost by any party;
- (c) Backup- since it operates on a DLT network, the contract is duplicated many times over;

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<sup>5</sup> <https://www.cw.com.hk/cloud/legal-issues-around-ai-big-data-cloud-dlt-and-e-payment>

<sup>6</sup> Philipp Paech, "International Law of Digital Asset Settlement- Functional Analysis and Draft Legal Principles", p 10

<sup>7</sup> *Ibid*, p 12

<sup>8</sup> [www.bockgeeks.com/guides/smart-contracts](http://www.bockgeeks.com/guides/smart-contracts)

- (d) Safety- since it operates on a DLT network, the data are encrypted and therefore more safe;
  - (e) Speed- the parties of a normal paper contract would typically need to spend a lot of time and paperwork to process the contract. This stands in marked contrast with a smart contract which uses computer code to automate tasks, thereby saving time for processing it;
  - (f) Save money- there is no need to rely on a broker, lawyer or other intermediaries to confirm the contract. And since no intermediaries are involved in its preparation, the parties of a smart contract do not need to pay any intermediary fees; and
  - (g) Accuracy- since it is an automated contract, human errors in preparing the contract will not arise.
11. As in the case of DLT, there are a number of legal questions concerning smart contracts,<sup>9</sup> including the following:
- (a) Whether the contractual terms embodied in the computer code of a smart contract are conclusive or whether the court may or should consider other evidence (e.g. collateral communications or agreement between the parties) for determining the terms of the contract between the parties<sup>10</sup>?
  - (b) What if there is no suitable automated remedy provided by a smart contract to resolve parties' disputes in a particular situation? For example, the smart contract might have been entered by a party by mistake, or there are unforeseen changes of circumstances prompting a party to demand for early termination of the contract, or a party might argue that the contract is invalid because its terms constitute a violation of the applicable law. In those situations, it would be necessary to initiate traditional

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<sup>9</sup> There are also practical risks as illustrated in the case of DAO (Decentralized Autonomous Organization) which is utilizing smart contracts and was hacked in 2016: <https://www.coindesk.com/understanding-dao-hack-journalists>

<sup>10</sup> Ole Boger "Remedies and judicial enforcement issues concerning digital assets and smart contracts" p 3

dispute resolution proceedings to resolve the dispute<sup>11</sup>;

- (c) In what way should data be stored in a smart contract for them to be admissible evidence at court? For example, should DLT networks be required to fulfill specified standards of trustworthiness for data stored in them to be admissible at court, or should data be required to be stored in specified DLT networks for them to be admissible at court<sup>12</sup>?
- (d) In what manner should data stored in DLT networks be admitted as evidence at court? For example, should witness statements on the contents of the data be admitted or should the data stored in the DLT networks themselves be admitted as evidence at court<sup>13</sup>? and
- (e) Are enforcement mechanisms of smart contracts always fair? Enforcement of a smart contract is automatic and dependent on whether the relevant contractual conditions have been fulfilled, regardless of whether it is fair and reasonable to enforce it in the particular circumstances of the case concerned. Hence, there might be doubts as to whether the automated enforcement mechanisms of a smart contract are always just and fair, especially as regards vulnerable persons (e.g. consumers) who might not fully appreciate the contents and legal effect of the smart contracts they entered into<sup>14</sup>.

## AI

12. Now, turning to AI. Broadly speaking, AI is a software and computer system that perform tasks that previously require human intelligence. Machine learning, voice recognition, question answering, and text extraction and classification are all but a few of the functions and capability covered by AI<sup>15</sup>. AI can also process and analyze information at a speed and scale far beyond any human capabilities.

13. As in the case of DLT and smart contracts, there are a number of legal issues concerning AI, including the following-

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<sup>11</sup> *Ibid*, p 2

<sup>12</sup> *Ibid*, p5

<sup>13</sup> *Ibid*, p 2

<sup>14</sup> Mateja Durovic, powerpoint presentation on "Smart Contracts and Traditional Contract Law" at the UNCITRAL-UNIDROIT Joint Workshop on 6-7 May, Rome.

<sup>15</sup> HK-lawyer, Oct 2018, p76

- (a) AI often predicts outcome based on a “probabilistic” model through machine learning of the relevant data. Therefore, it depends very much on the data available and provided to it, hence, its output may be unpredictable and unforeseeable to humans. Among others, this creates legal risks and uncertainty on the validity of contracts entered into by AI because there might not be sufficient meeting of minds between the actual contracting parties concerned<sup>16</sup>; and
- (b) Civil liability caused by the fault of AI is another complicated issue. For example, should we confer legal entity status to AI robots so that they would become solely responsible for any damage they might cause? Alternatively, should we only treat AI robots as products and hold their manufacturer responsible for any damage they might cause as part and parcel of product liability of the manufacturer? And in the latter case, how should we measure product defect of an AI robot? For example, if an AI robot can out-perform humans but still causes harm (i.e. it is not perfect but not bad), shall we still consider it defective? And what about the user of the AI robot? What if the data provided to it based on which the AI made the decision was insufficient or incorrect? Should we hold the data provider liable? What if the data provider is another AI? Should we make the user responsible for the damage caused by the AI robot, e.g. should the passenger of an autopilot car be responsible for an accident caused by the car, by the act of using or turning it on<sup>17</sup>?

14. The issues I mentioned above are some of the examples that illustrate the possible “disruptive features” brought by the modern technology on our current legal regimes. They have posed challenges for law-makers around the world to keep up with the scope and pace of the technological advancements. A core question has always been whether, and if so, to what extent, regulatory oversight should be put in place to govern this vast and fast evolving digital ecosystem. On the one hand, we want transactions entered into by these technologies to be certain and fair- which would inevitably mean some form of regulatory oversight. On the other hand, we must refrain from over-regulating the industry and impede its continued development. There is a delicate balance to strike, especially in the realm of DLT, smart contracts and AI where agreements

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<sup>16</sup> Nikita Aggarwal, powerpoint presentation on “AI and International Contract Law” at the UNCITRAL-UNIDROIT Joint Workshop on 6-7 May, Rome. Power Points by University of Oxford

<sup>17</sup> Gerhard Wagner, powerpoint presentation on “AI, Autonomous Systems and Liability” at the UNCITRAL-UNIDROIT Joint Workshop on 6-7 May, Rome.

and disputes between parties would often involve multiple jurisdictions.

15. It seems that the international community would need to work together and develop some standards, rules and principles for governing them. Such efforts would enhance uniformity of treatment of smart contracts and DLT in different jurisdictions. In turn, they would enhance the legal certainty and reliability of smart contracts conducted in DLT networks and benefit their users<sup>18</sup>. That is probably why the United Nations Commission on International Trade Law (UNCITRAL) and the International Institute for the Unification of Private Law (UNIDROIT) have jointly organized an expert workshop in early May this year to discuss some of these issues and how the international organizations may play a role in setting the standard or rules in this regard. I was one of the experts from Hong Kong being invited to attend the workshop to exchange our views with other experts around the world.

### **Hong Kong's Online Dispute Resolution (ODR) Initiative<sup>19</sup>**

16. Much has been said about the general legal issues and the work that may be required at the international level. I would now like to talk more about Hong Kong.

17. Over the past decades, Hong Kong has been one of the world's leading international arbitration centres. By virtue of the high-quality and efficient legal services, arbitration-friendly legislation and government policy supporting dispute resolution, and the ease of enforceability of its arbitral awards worldwide, including in the Mainland, Hong Kong has consistently been ranked as one of the most preferred seat for arbitration.

18. Furthermore, with the presence of reputable dispute resolution bodies, excellent arbitration facilities, extensive pool of highly reputable talents and the free-market system, Hong Kong has a solid foundation to develop as an international legal and dispute resolution services centre.

19. Capitalising on the opportunities brought about by the Belt and Road (B&R) Initiative as well as the Greater Bay Area Development Plan and in line with our policy objective to promote Hong Kong as an international legal and dispute resolution services centre, we have

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<sup>18</sup> Ole Boger, *supra*, p 8

<sup>19</sup> Legislative Council Panel on Administration of Justice and Legal Services Paper, entitled "Development of an Online Dispute Resolution and Deal Making Platform by Non-governmental Organisation" of 25 March 2019, CB(4)665/18-19(03)

examined the great potential for the development of online dispute resolution services, and an e-arbitration and e-mediation platform which will provide an efficient, cost-effective and secure platform for online deal-making and resolving disputes among parties in any part of the world, including commercial and investment disputes involving B&R countries and within the Greater Bay Area.

20. The platform may reduce costs and resolve the linguistic and geographical barriers that parties may face when resolving their disputes through the use of negotiation, mediation and arbitration. Once the platform comes into operation, enterprises may make use of the efficient, cost-effective and secure platform to resolve disputes with parties in any part of the world, including commercial and investment cross-border disputes.

#### eBRAM Centre

21. Against the above background, the Hong Kong Government is in the process of providing funding support of HK\$150 million to the eBRAM Centre – Electronic Business Related Arbitration and Mediation Centre (a company limited by guarantee formed by enthusiastic professional arbitrators, mediators and legal practitioners (i.e. members from The Law Society of Hong Kong, The Hong Kong Bar Association and the Asian Academy of International Law Limited) with support from the Logistics and Supply Chain MultiTech R&D Centre) to develop an internet-based online platform integrating state-of-the-art technologies (Neural Machine Learning on Translation, AI, IoT, Blockchain and Smart Contract, etc.).

22. The platform will facilitate the provision of cross-border one-stop dispute resolution services to enterprises worldwide including the B&R region, member economies of Asia Pacific Economic Cooperation (APEC), as well as the Greater Bay Area, and Mainland-focused enterprises. The online platform may also provide deal-making services to assist parties to enter into business deals on a secure and user-friendly online platform as well as a full spectrum of ODR services.

23. The development of the online platform will bring many benefits to us, through the provision of a secure, innovative and comprehensive ODR platform, which is low-cost and affordable for enterprises of any size, thereby facilitating their business operation and also achieving “better access to justice”; provision of business opportunities and



enhancement of training opportunities; enhancing Hong Kong's role as an international city of business in Asia; showcasing Hong Kong's unique status and capability under the "One country, Two systems" constitutional arrangement in addressing the service needs of diverse systems in various places; and more generally, promoting the use of various forms of ADR in Hong Kong.

24. Being a cosmopolitan city, Hong Kong has an unique advantage in providing ODR services for B&R countries and the Greater Bay Area given the sound legal and judicial systems with our common law system, the multilingual abilities of our talents and our reputation as a leading international financial centre as well as an international legal and dispute resolution services centre in the Asia-Pacific region. In this regard, many of the features proposed by the online platform (e.g. application of AI translation on the Chinese, English, Russian, Arabic and Spanish languages; the adoption of blockchain and secure cloud platform for transactions; usage of state-of-the-art data centres and strong legal framework for privacy protection) would be particularly attractive and useful not only to the businesses from B&R countries as well as the Greater Bay Area but also to all their trading partners across the globe.

25. The eBRAM Centre is working very hard to launch the online platform by the end of 2019. It has also indicated its interest to participate in an APEC ODR pilot project for resolving cross border disputes for micro, small and medium size enterprises (MSMEs) given that traditional means of dispute resolution does not work for these MSMEs resulting in difficulties for MSMEs in engaging or expanding in cross border trade and APEC would like to provide some support to and facilitate the MSMEs to engage in cross-border trade through the project. Hong Kong, China has been participating actively in this APEC project (for which, I am the Convenor leading the project).

### **Closing Remark**

26. Lastly, I would like to reiterate that my Department strongly supports the development of LawTech in Hong Kong while at the same time, we recognize the potential legal issues and the challenges ahead. We look forward to working with the stakeholders, the legal sector and international organizations, including LAWASIA, to embrace innovation and technology as well as to tackle the challenges, which will further facilitate access to justice, inclusive growth and sustainable development.

27. On that note, I wish you all a very rewarding conference and for those coming from overseas, a wonderful stay in Hong Kong. Thank you very much.

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