The Government of the Hong Kong Special Administrative Region
Press Releases

LCQ16: Application of blockchain technology
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Following is a question by the Hon Charles Mok and a written reply by the Secretary for Innovation and Technology, Mr Nicholas W Yang, in the Legislative Council today (June 21):

Question:

A study has pointed out that governments of over 60 per cent of regions across the world will increase investments on and application of blockchain technology in the coming three years. Blockchain technology is a type of distributed ledger technologies (DLT), which works on the principle of breaking up a database into blocks and connecting the blocks with immutable links that are built with a hash function, so as to enable participants to create, store and disseminate information in a highly efficient and reliable manner. Another study has pointed out that by breaking through the existing technology boundaries, blockchain technology can significantly enhance the efficiency of public services, thereby saving public expenditure, and will change the paper-based mode of operation currently adopted by governments. Many regions in the world have started exploring the application of blockchain technology in various industries (the financial services industry in particular), such as fund transfer, payment service, exchange and clearing, and information authentication system. On the other hand, the application of blockchain technology is not yet subject to regulation under the existing legislation. In this connection, will the Government inform this Council:

(1) whether it has assessed the potential of blockchain technology in enhancing the efficiency of public services, such as handling tax returns, land registration, voting and issuance of various types of identification documents; if it has assessed and the outcome is in the affirmative, whether it will formulate strategies for extensive application of such technology;

(2) whether it has studied the inclusion of a function of identity verification using blockchain technology in the next generation smart identity card; if so, of the details; if not, the reasons for that;

(3) whether it has studied the regulation of the payment and currency exchange activities of digital currencies using blockchain technology; if so, of the details; if not, whether it will conduct the relevant study;

(4) whether the Hong Kong Smart City Blueprint Consultancy Study commissioned by the Government currently underway will cover the exploration of (i) matters regarding the application and regulation of blockchain technology, and (ii) measures to promote the application of such technology in the Government and commercial organisations; and

(5) whether it will allocate more scientific research funding for blockchain and DLT technologies and strengthen the training of information technology talents with the relevant knowledge; if so, of the details; if not, the reasons for that?

Reply:

President,

The Government has been closely monitoring technology development worldwide, including the application of new technologies in different industries. Regarding distributed ledger technologies (DLT), the Financial Services and the Treasury Bureau (FSTB) will encourage the financial industry to develop and apply the relevant technology, and promote Hong Kong as a hub for the setting and application of standards for the technology. Meanwhile, the second stage of the Hong Kong Monetary Authority (HKMA)'s study on blockchain technology is already underway, which will cover proof-of-concept trials with a number of banks, collection of data to assess the feasibility of the blockchain technology, as well as the possible regulatory implications. Findings of the study will be published in the second half of 2017.

In recent years, the Hong Kong Applied Science and Technology Research Institute and the Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies have actively conducted research and development (R&D) on technologies relating to blockchain and DLT, and are collaborating closely with the industry (e.g. the financial industry) in deploying the technologies for application in related products.

The Office of the Government Chief Information Officer (OGCIO) has all along been keeping a close watch on the latest development of emerging technologies and various information and communications technology (ICT) solutions (such as blockchain technology), and promoting the awareness and adoption of innovative technologies and ICT solutions in the Government and the community.

After consulting relevant bureaux and departments (B/Ds), our reply to the different parts of the question is as follows:

(1) Through organising seminars, training courses and setting up themed websites, the OGCIO introduces DLT to Government officers, covering operational principles, application and security of the technology, as well as the value it could bring to different industries, etc.

Whether blockchain technology can be applied in enhancing public services is still in the exploratory stage. The OGCIO has not noticed any B/Ds putting forward concrete application proposals, including handling tax returns, land registration, voting and issuance of identification documents. The OGCIO will closely monitor the development of the relevant technology, and will provide advice and assistance to B/Ds when necessary.

(2) As regards the issuance of smart identity cards, the Security Bureau advised that legislation relevant to the registration of persons (ROP) mounts tight control over the use or collection of ROP data. As regards the immigration applications of the smart identity card, biometric identification technology has been incorporated into the smart identity card and related immigration clearance facilities for the purpose of verifying the card holder's identity. The Immigration Department needs not, and will not share with other government departments the personal identification data of the card holder. Therefore, as far as the immigration applications of the smart identity card are concerned, there is no plan at present to use the blockchain technology for identity verification.

(3) According to the FSTB, some private-sector digital "currencies" using blockchain technology do not have any backing whether in physical form or from the issuer. They are not legal tender but virtual "commodities". Such virtual commodity is highly volatile in price and does not qualify as a means of payment or electronic money. Like most jurisdictions, Hong Kong does not have any targeted regulatory measures on virtual commodities specifically in terms of their safety or soundness, as well as the trading platforms or operators of such commodities.

Nevertheless, a number of central banks are actively exploring and conducting research on the issuance of Central Bank Digital Currency (CBDC) using DLT. In collaboration with the three note-issuing banks, the Hong Kong Interbank Clearing Limited and the R3 consortium, the HKMA has commenced a study on CBDC with a view to better understanding its feasibility, as well as potential costs and benefits through exploring its use in domestic inter-bank payments, corporate payment at wholesale level and delivery-versus-payment debt securities settlement. The first phase of the study is expected to be completed in the fourth quarter of this year. Subject to the findings of the first phase, the HKMA will determine the appropriate way forward.

(4) The OGCIO has commissioned a consultancy study to formulate a smart city blueprint for Hong Kong. The scope of the study covers digital framework and standards, which include development and application of various technologies. The study will be completed in mid-2017.

(5) Through various programmes of the Innovation and Technology Fund, the Innovation and Technology Commission has been providing funding support for universities, local public research institutions (e.g. R&D centres) and private companies to conduct R&D projects in various technology areas, recruit local university graduates as interns, as well as conduct trials of their R&D outcomes in the public sector, including projects involving blockchain technology and DLT.

To help enhance the DLT knowledge of local information technology practitioners, the OGCIO organises different activities, including seminars and training courses, for them to participate. The Cyberport organised various activities in 2016-17, such as Blockchain Strategies for Business, FinTech O-2-O Global Summit etc, to explore in-depth and exchange views on the development potential, business value and application strategies of blockchain technology in different industries in Hong Kong and around the world.

The Hong Kong Science and Technology Parks Corporation (HKSTPC) has been, in collaboration with its technical partners, organising various promotional and training activities, including a number of seminars on DLT. The HKSTPC will continue to organise more seminars and workshops for companies and technology professionals in the Science Park.

Moreover, tertiary institutions in Hong Kong also offer degree programmes relevant to financial technology, including courses on blockchain technology and DLT.

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