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For discussion on
8 May 2017

Legislative Council Panel
on Information Technology and Broadcasting

E-Government Services

Purpose

This paper updates Members on the measures to enhance e-Government services and elaborates on our plans and initiatives to support government bureaux/departments ("B/Ds") in achieving their policy objectives through wider and better adoption of information technology ("IT").

Background

2. In order to provide highly efficient, secure and citizen-centric e-Government services to improve people's quality of living, the Office of the Government Chief Information Officer ("OGCIO") has been supporting B/Ds in opening up public sector information ("PSI"), enhancing various e-Government services, and leveraging the Internet and the social media to enhance communication with the public. In addition, OGCIO has been actively promoting to B/Ds the adoption of big data analytics and new technologies to boost operational efficiency and service quality.

E-Government information and services for the public

Opening up PSI

3. Opening up PSI for free public use is a global trend. At present, the Government's "data.gov.hk" portal disseminates close to 7 000 datasets in 18 categories, covering climate and weather, transport, finance, population, etc., which are provided by B/Ds as well as public and private organisations. We hope that through community wisdom, various sectors can be encouraged to develop innovative applications using various datasets, in order to spur innovation, bring convenience to the public and create business opportunities

while fostering the development of a digital economy. To facilitate the public to select the required information, the "data.gov.hk" portal began to provide various Application Programming Interfaces ("APIs") since the end of last year. There are currently some 700 APIs available and we target to increase the number to around 1 000 in mid-2017 to cater for different applications. We are also enhancing the "data.gov.hk" portal by re-organising the release of datasets to facilitate searching, and providing more geo-tagged information (i.e. showing the geographical location of the data on digital maps) and historical datasets (i.e. past records of datasets) on the portal to facilitate the public to develop innovative applications and services by using PSI.

Diversified e-Government services

4. OGCIO encourages B/Ds to implement diversified e-Government services, including government mobile apps and e-forms, and continues to enhance the "GovHK" portal, so that the public can use e-Government services in a safer and more convenient manner.

5. In November 2016, OGCIO launched the newly designed "GovHK" portal, which was well received by the public. The new version has adopted a "common look and feel" and design standards, as well as responsive design, so that the public can browse the content of the portal smoothly regardless of the devices they use, such as desktop computers, tablet computers and smartphones, etc. In addition, to facilitate browsing by persons with disabilities, all government websites have already complied with the Web Content Accessibility Guidelines Version 2.0 Level AA accessibility requirements promulgated by the World Wide Web Consortium.

6. To facilitate the public to use public services anytime and anywhere, OGCIO has been supporting B/Ds to develop user-friendly mobile apps to address users' needs. OGCIO updated the "Practice Guide for Developing Mobile Apps" in 2016, requiring B/Ds to, when considering the development of mobile apps, set objectives of the app, understand the needs of target user groups, and evaluate the potential benefits that the app may bring to the Government and the public. After the launch of an app, the relevant B/D should also regularly review and analyse its cost-effectiveness and make necessary improvements.

7. To provide more convenient services to the public, the Government is committed to digitising the process of online submission of government forms. Except for government forms which are not amenable to electronic submission due to legal requirements or procedural constraints, more than 1 300 government forms can now be submitted electronically. OGCIO will continue to work with relevant B/Ds to digitise the remaining government forms which are amenable to electronic submission. In addition, we also require B/Ds to consider re-engineering their business processes when they develop new e-Government services or upgrading existing services, in order to allow the public to fill in application forms and submit information electronically.

8. At present, the public can use different electronic and mobile payment services (such as e-cheque, Internet banking, credit cards and PPS) to pay government bills and fees. OGCIO is currently studying with relevant departments on mobile payment technology which supports smartphone e-wallet, and is aiming to work out relevant technology options within this year. B/Ds can consider adopting these options having regard to their business needs to further facilitate public use of government services.

Enhancing communication with the public

9. The Government adopts different channels (including traditional media and the Internet) to disseminate information and communicate with the public. At present, B/Ds have set up over 30 Facebook pages and ten blogs, and established over 20 YouTube channels to communicate with the public and share the latest news. For example,

(a) the Chief Executive and several principal officials have been writing blogs to share with the public the Government's latest news;

(b) the Innovation and Technology Bureau and the Innovation and Technology Commission, through their Facebook pages, disseminate the latest innovation and technology events and development; and

(c) OGCIO, through its YouTube channel, provides the latest news on information security, and makes use of various social media to promote the annual events of "Internet Economy Summit",

"International IT Fest" and "Hong Kong ICT Awards".

Boosting operational efficiency through the adoption of new technologies

Big Data

10. Big data has become the core of technology and business innovation and a major pillar in smart city development. OGCIO has been promoting big data analytics to B/Ds and exploring its application within the Government to facilitate policy formulation, boost operational efficiency, enhance public services and strengthen cyber security. Relevant examples include:

(a) OGCIO, by collating and evaluating information on cyber threats and data from different sources through big data analytics, issues more targeted cyber threat alerts to B/Ds and advises them on more effective incident response, thereby further strengthening cyber security and protecting the operation of the Government's computer system and data of citizens;

(b) the Efficiency Unit, by employing big data technology to analyse enquiry and complaint data of the 1823 hotline centre, provides relevant B/Ds with insights to improve public service delivery; and

(c) the Marine Department, by analysing vessel traffic data, estimates the time and location of vessels passing through a watercourse for the control and management of sea transport as well as real-time vessel scheduling.

11. OGCIO will implement a pilot big data analytics platform this year to facilitate B/Ds in data sharing and collaborative development of big data applications. Through promotion and training activities, OGCIO will also raise the awareness of B/Ds on big data and strengthen their capabilities in developing big data applications.

12. The Development Bureau, collaborating with relevant B/Ds, is promoting the establishment of a Common Spatial Data Infrastructure ("CSDI") to provide B/Ds, as well as public and private organisations, with spatial data that can be shared, in order to support various smart city applications and align with information infrastructure under the smart city blueprint. The

Development Bureau has engaged a consultant to conduct a study with the aim of formulating the general development strategy and implementation arrangements for CSDI.

Artificial intelligence ("AI")

13. With the rapid development of AI, the Government also makes use of this technology to improve the quality of public service, streamline the decision making process and boost operational efficiency. For example:

(a) the Immigration Department uses AI in its eBrain project to automatically assess if application forms submitted by the public comply with the laws of Hong Kong, thereby reducing processing time;

(b) the Fire Services Department uses virtual reality in real-time computer simulation for emergency incident response and on-site fire command related training; and

(c) the Hong Kong Observatory, by analysing a vast amount of meteorological data, identifies the weather systems and mechanisms that have caused the prevailing weather conditions, and predicts the possible changes of these systems which may follow, in order to formulate weather forecasts or issue appropriate weather warnings.

Cloud platform

14. To keep abreast of the contemporary technology development, OGCIO has established various infrastructures facilitating B/Ds in delivering e-Government services in an agile, convenient, cost-effective, secure and environmentally friendly manner. These include the Government Cloud Platform ("GovCloud") which enables B/Ds to cope with the ever-increasing demand for IT resources in a more flexible and agile way to expedite the development and provision of quality e-Government services. B/Ds are required to accord priority to adopting government cloud services having regard to their respective information security and project needs when developing new systems or revamping existing systems.

15. At present, a number of e-Government services are running on

GovCloud and the e-Government Infrastructure Services platform, including the Electronic Health Record Sharing System ("eHRSS") launched by the Food and Health Bureau ("FHB") last year, which collects patients' online registrations; and the Dutiable Commodities System of the Customs and Excise Department ("C&ED"). OGCIO has also implemented a number of common services on the cloud platform, including electronic procurement, human resources management and electronic record keeping for use by B/Ds.

16. OGCIO will engage a consultant this year to review the usage of various government cloud platforms and make proposals on building the next generation of government cloud infrastructure in accordance with technological development and business needs. OGCIO will also explore measures for more timely adoption of advanced technologies and relevant standards in information systems developed by B/Ds.

Centrally Managed Messaging Platform ("CMMP")

17. With the continuous technology advancement and rapid increase in cyber security incidents, the e-mail systems currently used by B/Ds under a decentralised model is less capable of leveraging on technology advancement in a timely manner and containing cyber security risks. OGCIO is planning to establish the next generation of messaging system under a centralised model to provide a more secure digital infrastructure with additional communication and other functions, aiming to improve the overall work efficiency within the Government. CMMP will be more reliable, secure and energy-efficient, and can help B/Ds improve their work efficiency and productivity and achieve economies of scale for the Government as a whole. We have consulted this Panel on the establishment of CMMP on 13 March this year and obtained the Panel's support. The relevant funding proposal has been submitted to the Finance Committee for consideration.

Other technologies

18. The Government is also proactively adopting various technologies to enhance operational efficiency and improve the quality of public service. For example, the Water Supplies Department's Automatic Meter Reading Information System pilot project collects and manages data on water usage sent

from smart water meters; C&ED deploys e-Lock and the global positioning system technology to separately monitor road cargo with the Mainland customs authority, thereby reducing duplicate inspection on the same shipment and improving the efficiency of customs clearance.

E-Government services provided by B/Ds

19. As at 2016, more than 800 e-Government services are provided with an overall utilisation of 90 billion times, representing an increase of 75% as compared to 51.5 billion in 2015. The utilisation figures of the most commonly used e-Government services are at **Annex**. Furthermore, many B/Ds have also made good progress on enhancing e-Government services, and a few examples are set out below.

20. C&ED launched the electronic licensing service of the Dutiable Commodities ("DC") System in January this year to streamline the processing for DC licences for the purpose of trade facilitation. The system provides efficient and reliable DC-related services, enables traders to submit electronic application of DC licences and introduces new services, including sending of notification and renewal reminders to traders, which can save time and resources.

21. The territory-wide eHRSS implemented by FHB was officially launched in March last year. As at April this year, over 460 000 citizens have registered to join eHRSS. The Hospital Authority, Department of Health, 11 private hospitals and over 1 200 private healthcare organisations have also joined the programme. About 37 000 healthcare professionals working in these public and private healthcare organisations can, with patients' knowledge and authorisation, conveniently and securely access and share their health records through the eHRSS for healthcare purposes. FHB will commence stage two of system development this year to provide additional and enhanced sharing and security functions.

22. The Hong Kong Police Force launched the Third Generation of Major Incident Investigation and Disaster Support System in January 2016. The system makes use of advanced functions to effectively manage and analyse the vast amount of data collected during the investigation of serious crimes,

help explore insights into key issues for crime detection, and understand the hidden relationships and patterns of these data. Moreover, the system can identify close contacts in suspected or confirmed cases of communicable diseases, as well as the time and place of such contacts to facilitate large-scale source-of-disease tracing activities during a major epidemic outbreak.

Conclusion

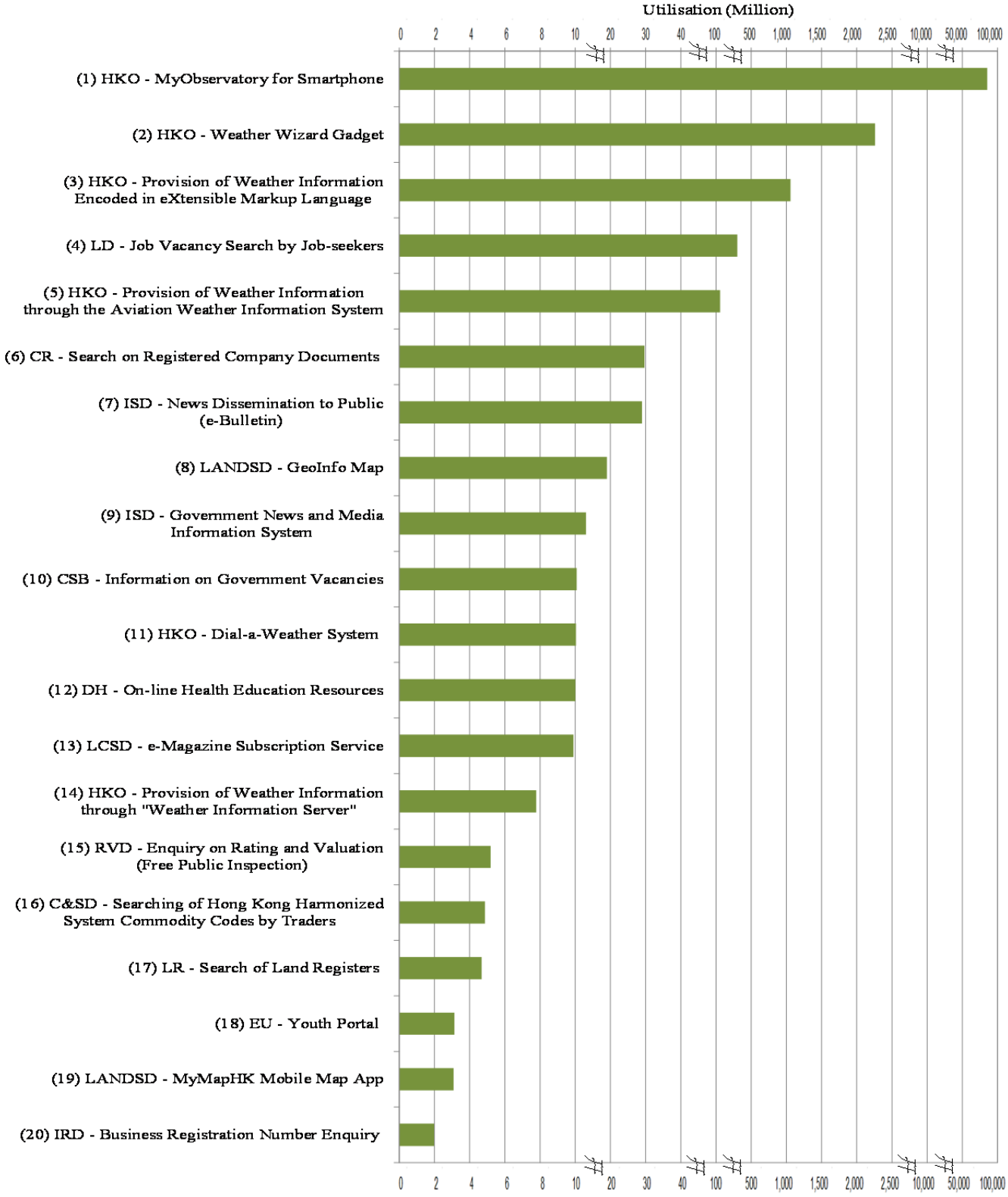
23. We will continue to make good use of innovation and technology, including cloud technologies, mobile technologies, big data analytics, Internet of Things technology and AI, etc., to improve people's quality of living and enhance government operational efficiency, thereby making Hong Kong a more competitive international metropolis.

Innovation and Technology Bureau
Office of the Government Chief Information Officer
May 2017

Annex

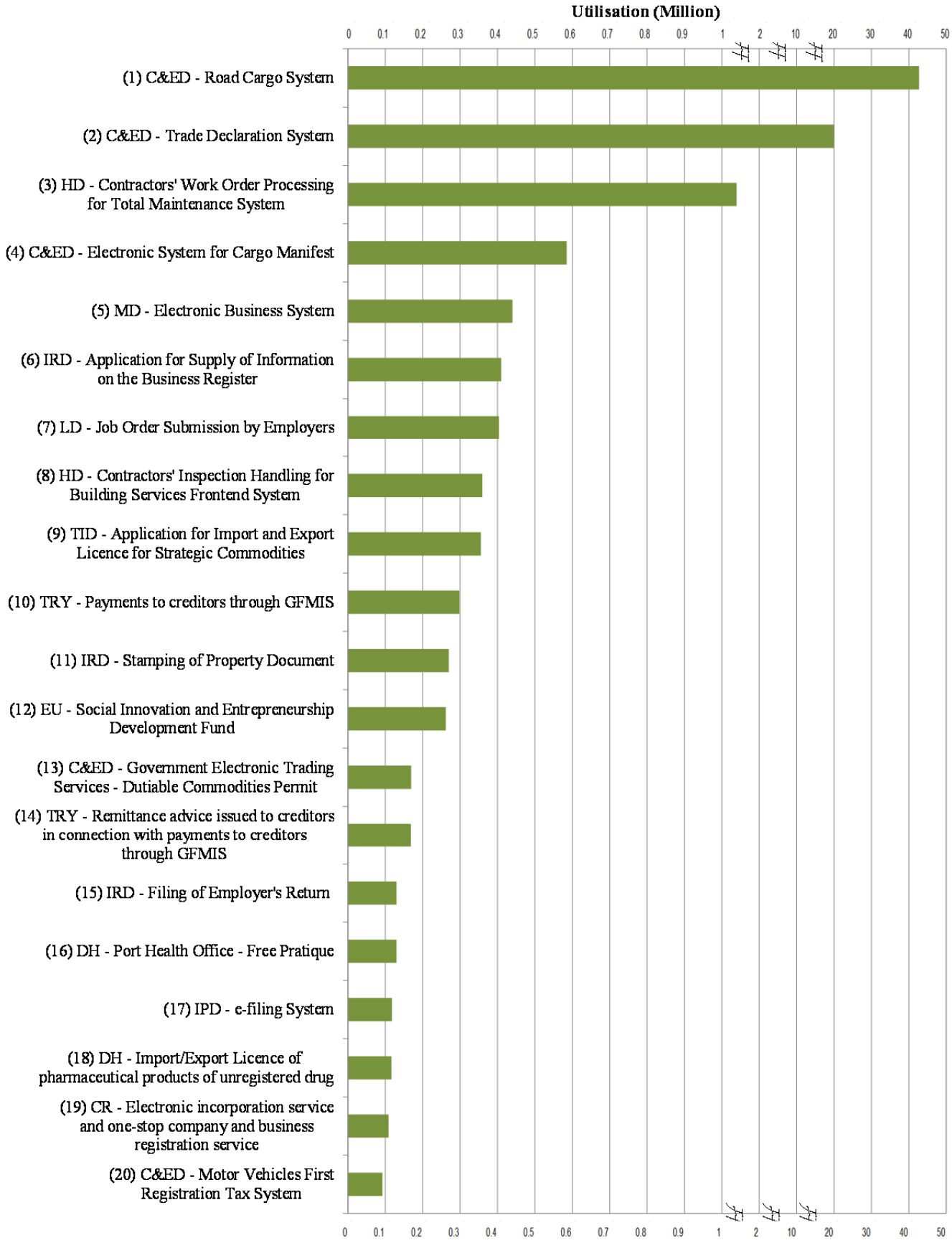
Utilisation figures of commonly used e-Government services in 2016

1) Informational e-services



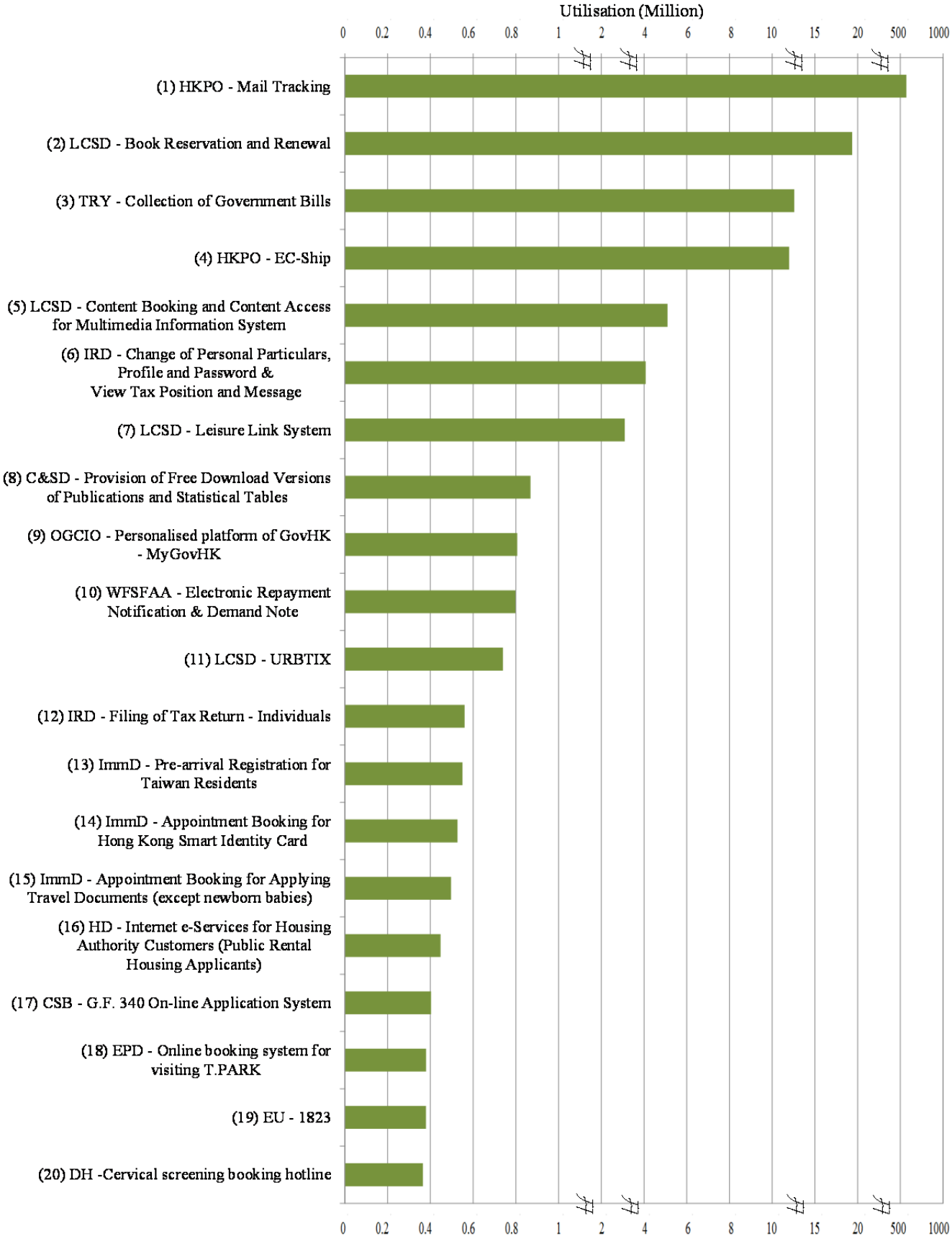
Note: "Informational" type of service means its purpose is dissemination of information, which can be static or generated based on selection criteria, e.g. weather information release.

2) Transactional e-services (Government to Business)



Note: "Transactional" type of service involves interactive sessions with users, e.g. on-line application for licences and filing of returns.

3) Transactional e-services (Government to Citizen)



Note: "Transactional" type of service involves interactive sessions with users, e.g. on-line booking of facilities and filing of returns.

Key

C&ED	Customs and Excise Department
C&SD	Census and Statistics Department
CR	Companies Registry
CSB	Civil Service Bureau
DH	Department of Health
EPD	Environmental Protection Department
EU	Efficiency Unit
HD	Housing Department
HKO	Hong Kong Observatory
HKPO	Hongkong Post
ImmD	Immigration Department
IPD	Intellectual Property Department
IRD	Inland Revenue Department
ISD	Information Services Department
LANDSD	Lands Department
LCSD	Leisure and Cultural Services Department
LD	Labour Department
LR	The Land Registry
MD	Marine Department
OGCIO	Office of the Government Chief Information Officer
RVD	Rating and Valuation Department
TID	Trade and Industry Department
TRY	The Treasury
WFSFAA	Working Family and Student Financial Assistance Agency