

**Questions & Answers on the HKEx Orion Programme
28 March 2012**

HKEx Orion Programme

1. *What is the scope of the HKEx Orion programme?*

The HKEx Orion programme will deliver connectivity networks (SDNet/2), a state-of-the-art data centre and systems providing order matching, market data dissemination and market access services. The new infrastructure and platforms will be implemented in stages over the next three years to incrementally transform the market.

The Over-the-counter Clearing service is not included in the Orion initiatives because it is a new business with a different set of customers. The Orion initiatives are focused on our existing customer base.

2. *Why is HKEx introducing the programme now?*

Hong Kong is part of a global and very competitive financial system, and technology drives financial markets. HKEx has to invest in technology to ensure Hong Kong retains and strengthens its position as a leading financial centre, to enable us to face increasing competition from other exchanges in Asia and around the world, and to drive our future growth.

We have also seen ventures being set up in Hong Kong and overseas which compete with our markets here, so we do have pressing need to invest to ensure that both HKEx and Hong Kong can compete.

The programme is comprised of long-term initiatives which require a long-term vision independent of the cycles of the markets.

3. *What benefits will this programme bring to Exchange Participants?*

Exchange participants (EPs) will benefit in many ways. At a high level, Orion will boost the market platforms' connectivity and capacity which aims to bring in more liquidity for the benefit of all participants. Technically, the entire infrastructure will be brought up to leading standards of performance in terms of bandwidth, speed and latency.

Cost of transactions is a major consideration behind our planned initiatives. HKEx aims to rationalise its infrastructure where possible to reduce direct costs to EPs, and more choices will be provided such as a FIX^[1] interface and different market data products.

[1] Financial Information Exchange (FIX) protocol is a series of messaging specifications for the electronic communication of trade-related messages. It has been developed through the collaboration of banks, broker-dealers, exchanges, industry utilities and associations, institutional investors and information technology providers from around the world which share a vision of a common, global language for the automated trading of financial instruments.

Also, the benefits will not be restricted to particular segments of EPs and we believe all groups will be able to gain benefits. The new Market Data system, for example, will produce a range of feeds that are aimed to meet the needs of different groups of participants including small brokers. Also, Hosting Services will allow small brokers to leverage on the ecosystem, and enable technology vendors to set up trading services which can reduce costs for small brokers.

4. *What is the anticipated total investment for HKEx?*

The HKEx Orion programme demonstrates HKEx's significant commitment to building Hong Kong's competitiveness. The total budget for the projects under the Orion initiatives is around \$3 billion. This includes initiatives already underway such as the Next Generation Data Centre, which accounts for about one-third of that figure, as well as the Hosting Services initiative.

5. *What will be the minimum investment for brokers and other market participants?*

Investment costs to brokers and other market participants will depend on their IT arrangements so it is not possible to provide a fixed number. We are conscious that changes that we make may result in costs to brokers and market participants. With that in mind, we are introducing changes gradually and where possible with transition periods to give the market more time to make the adjustments. We will also communicate with market participants regarding details of our initiatives before we proceed with implementation.

6. *What is the timetable for individual initiatives under the HKEx Orion programme?*

SDNet/2, the upgraded network which will provide high speed access to HKEx's core platforms, and Hosting Services from HKEx's new state-of-the-art data centre are scheduled for deployment this year. New market data services will be rolled out in 2013, with other platforms to follow.

Other projects are at different stages of evolution. Separate announcements will be made when they are sufficiently developed to enable us to announce a timeframe and give participants sufficient time to make the necessary preparations.

7. *How will the current and new securities and derivatives trading systems differ? Will they support new functionalities and additional asset classes?*

The functionalities of the new trading systems are still being considered and will be thoroughly discussed with market participants before any decisions are made on the inclusions.

On the derivatives front, our aim at this stage is to support additional capacity for our existing asset classes. However, our systems are capable of supporting other asset classes, including commodities, so we will have flexibility as opportunities open up.

8. Are these initiatives being developed in-house or with partners?

These initiatives are being developed by both the in-house team and with partners. We are very proud of our internal development capabilities but we will also use partners where specialist technology is required.

Hosting Services

9. What is the investment HKEx has made in the Hosting Services business?

We are investing in the Hosting Services project in a number of phases. This includes building two extra floors in the Next Generation Data Centre, setting up of electrical and mechanical infrastructure, and building network and IT systems to support the services. We expect the business setup and implementation of Hosting Services will cost approximately \$750 million over the next three years, and we plan to fund the project with internal resources.

10. What are the benefits provided by HKEx's Hosting Services?

Hosting Services will offer low latency benefits. SDNet is currently the only means to access HKEx markets for electronic trading. Once Hosting Services are launched, an alternative means will be provided through an in-building low latency local area network. The network latency target is below 50 microseconds compared with the SDNet/2 target of about 1.5 milliseconds (1,500 microseconds).

Apart from latency, the ecosystem we are creating will allow our EPs to efficiently subscribe to services provided by ecosystem members, such as global connectivity, order management, risk management and more.

11. What are some examples of ecosystem services and which do you expect to be most popular with market participants?

Global connectivity, order management, risk management, global market data and cloud computing are some of the services the ecosystem members could offer. Our ecosystem approach offers a strong value proposition through which participants can access global connectivity and various types of software services cost effectively. We believe global connectivity will be popular and that is why a carrier neutral data centre is a key component of our business model.

12. What will HKEx do to ensure its offer of Hosting Services will not benefit large and foreign brokers only, and at the expense of small local brokers?

Fairness to all users is our primary objective. As such, we have put the following measures in place:

Space allocation scheme

If space becomes a constraint, all EPs will start with an allocation of one rack and requests for more racks will only be addressed when there is spare space left after the initial round of service applications. This allocation system prevents large users from taking up too much space and ensures smaller users have an opportunity to use our services.

Equal latency network design

Our custom network design ensures latency is practically the same for all users, regardless of their size when they join or the location of their racks within the data centre.

Entry level special offer for small users

To ensure EPs with fewer technical and footprint requirements than others are able to utilise our services, we are providing a special entry level package comprised of half a rack of space with connectivity plus a rent free period of seven months over a 24 month contract period. Those who plan to migrate to Broker Supplied System (BSS) from trading terminals/ multi-work stations will be given an additional three month waiver, saving monthly fees totalling \$250,000. This offer is only given to Exchange Participants and valid until 31 December 2012.

13. How does your price compare with other commercial data centres in Hong Kong?

Our price point is among the lowest compared to offerings from other major exchanges. In fact, it is our intention to offer more affordable services so that more users can access our services and share in their benefits.

As we will have a high resilience Tier-4 grade infrastructure, we are unable to find any comparable facility in the local market. We believe we are in a unique position to create an ecosystem which delivers high value added services on top of very reliable infrastructure.

14. How much interest has there been so far?

Since we announced our founding member programme on 13 February, there has been strong interest and we have approved a total of 22 applications from network service providers, trading software providers and information vendors that will form a strong ecosystem foundation through which EPs can subscribe for various types of services offered by those providers.