



HKEx Orion Market Data Platform

30th March, 2012



Agenda

**1. Overview of HKEx Orion and
HKEx Orion Market Data Platform**

By Bryan Chan
Head of Market Data Department

**2. Product Features and
Implementation**

By Winnie Poon
Business Development
Market Data Department

Overview of HKEx Orion and HKEx Orion Market Data Platform

Bryan Chan
Head of Market Data Department



Content

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Overview of HKEx Orion

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Overview of HKEx Orion Market Data Platform

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Rollout Phases

Leading Hong Kong's Next Transformation

Connectedness

Enhancing access &
connectivity

Community

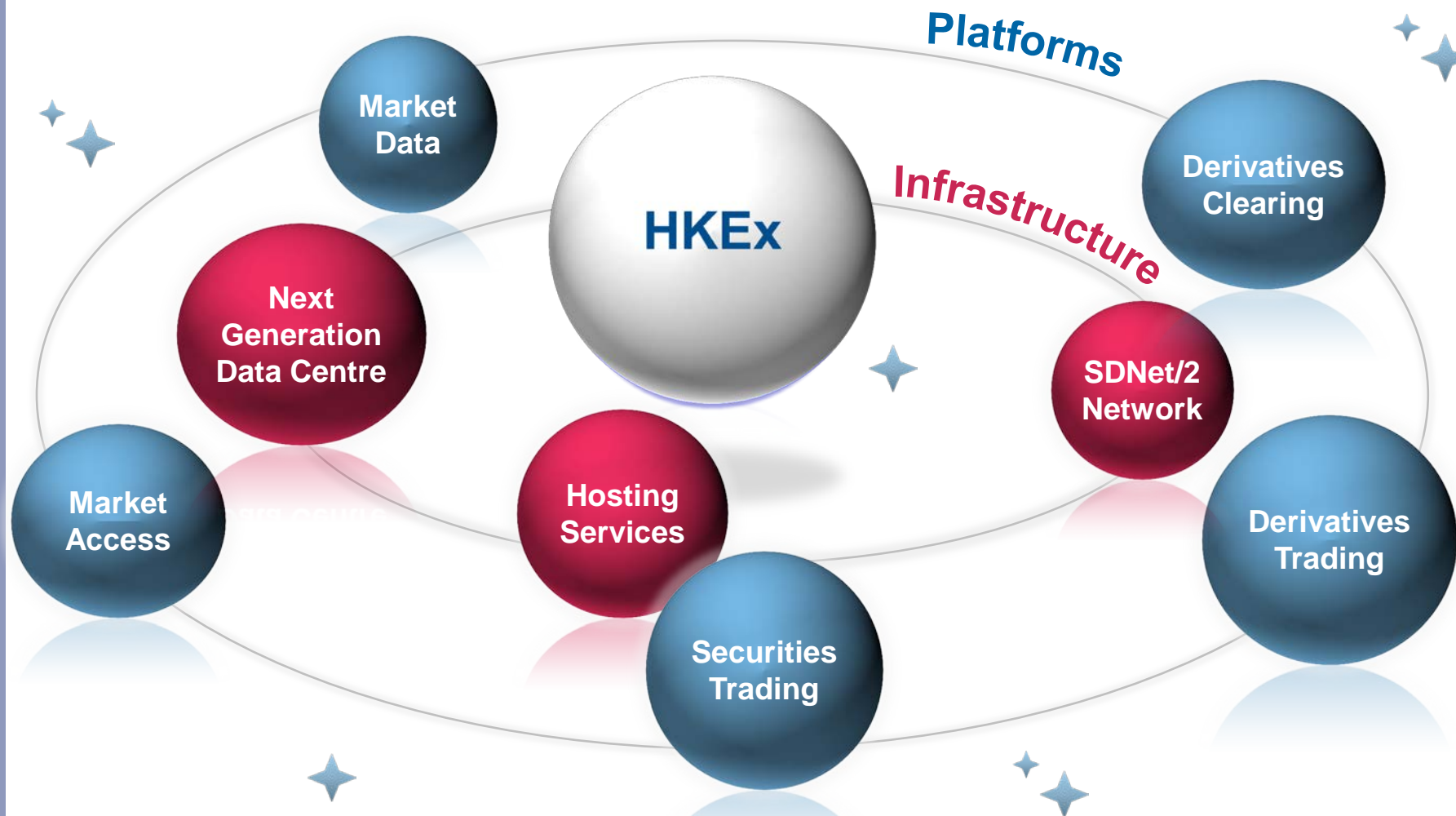
Seizing opportunities
together

Competitiveness

Staying ahead and enhancing
competitiveness



Essential Technology Investment



Infrastructure

**Next
Generation
Data
Centre**

- ✓ State-of-the-art
- ✓ Consolidation of legacy HKEx data centres

**Hosting
Services**

- ✓ Low latency access to HKEx platforms
- ✓ Tier-4 standard hosted ecosystem

**SDNet/2
Network**

- ✓ Higher bandwidth
- ✓ Competitive pricing

Platforms

Market
Data

- ✓ Suite of market data products
- ✓ Remote distribution (e.g. Mainland)

Market
Access

- ✓ Cost reduction
- ✓ Additional functionality

Securities
Trading

- ✓ Enhancements and revision of legacy functionality
- ✓ Lower latency and higher capacity

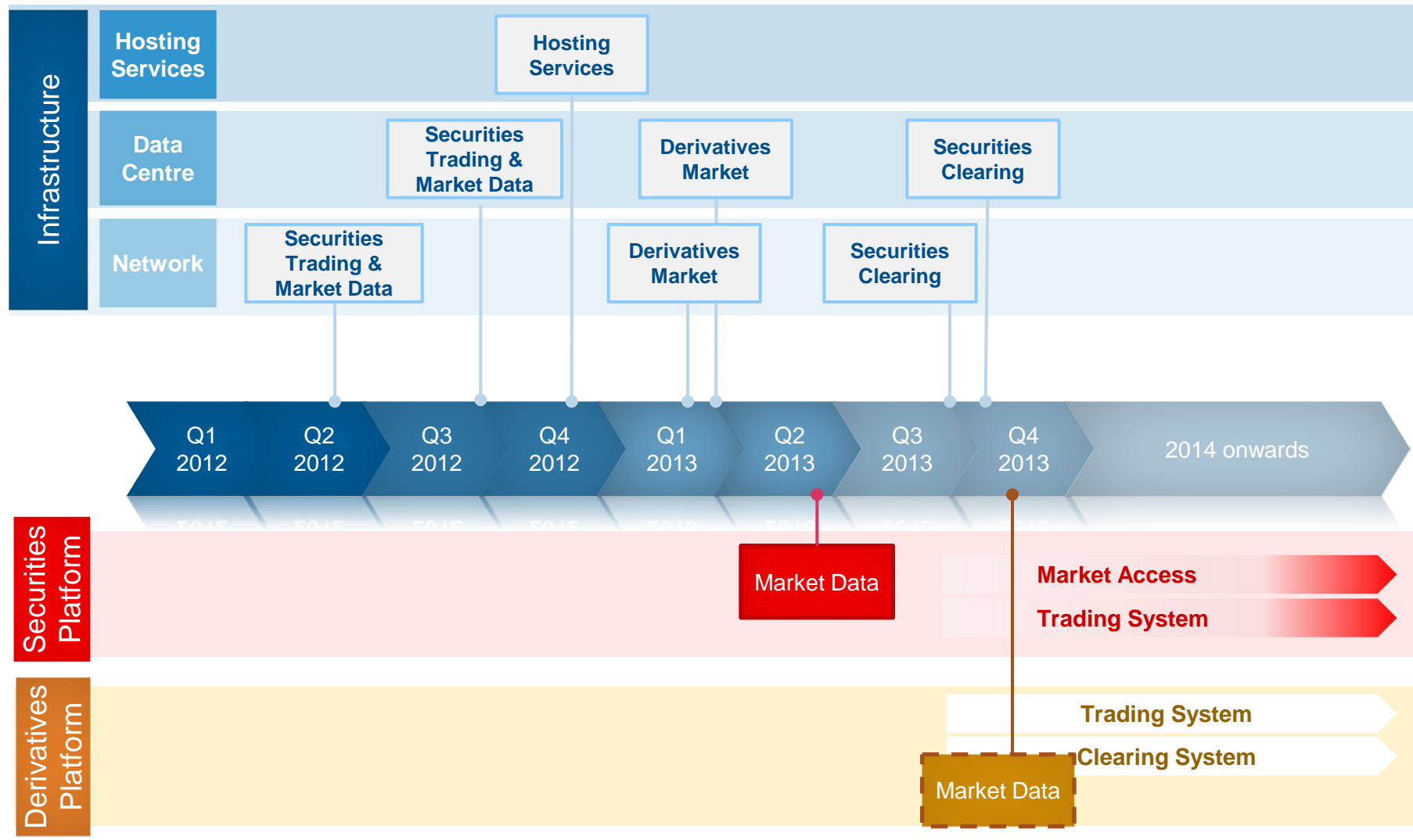
Derivatives
Trading

- ✓ Increased capacity to support options market expansion
- ✓ Industry leading low latency trading platform

Derivatives
Clearing

- ✓ Increased performance and throughput capacity
- ✓ Faster response time to daily operational processing

Implementation Schedule



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Overview of HKEx Orion

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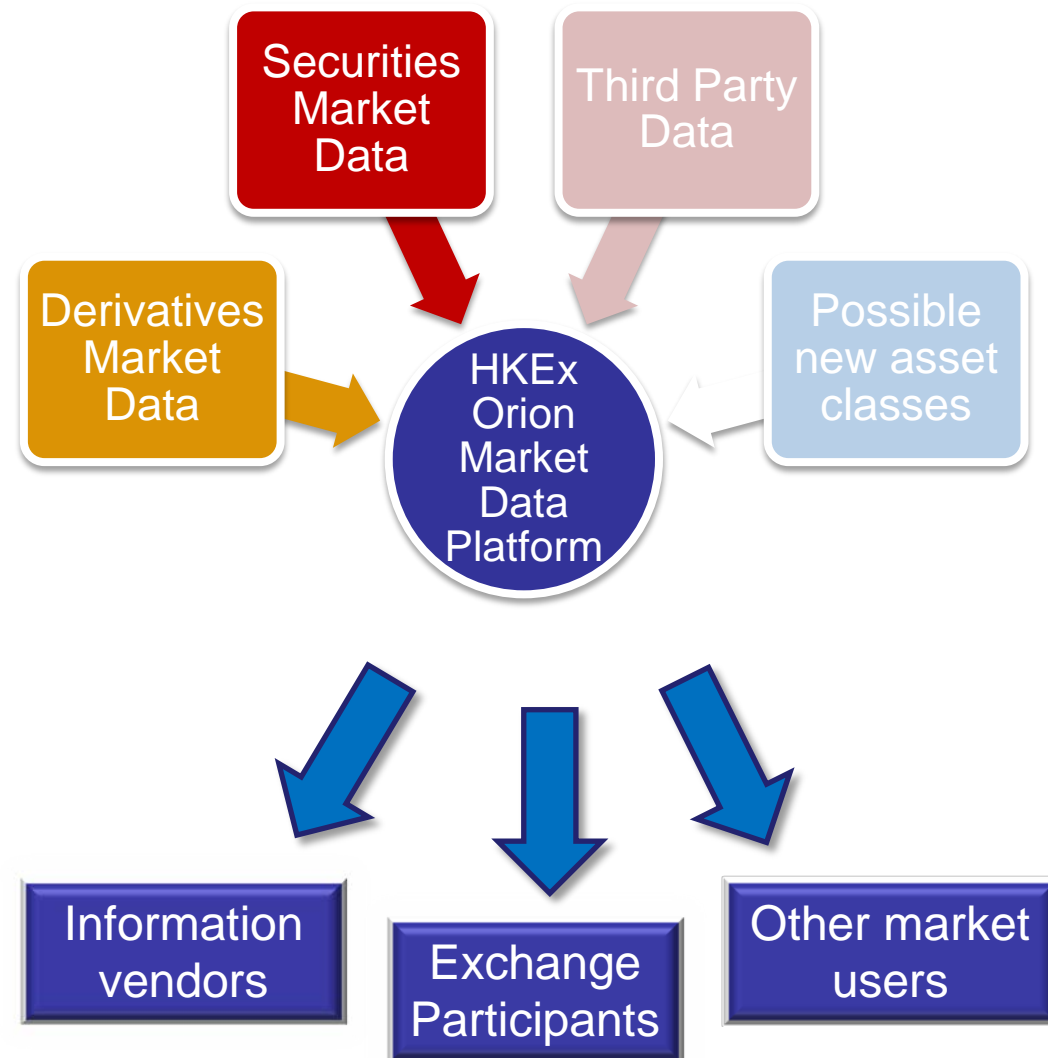
Overview of HKEx Orion Market Data Platform

3

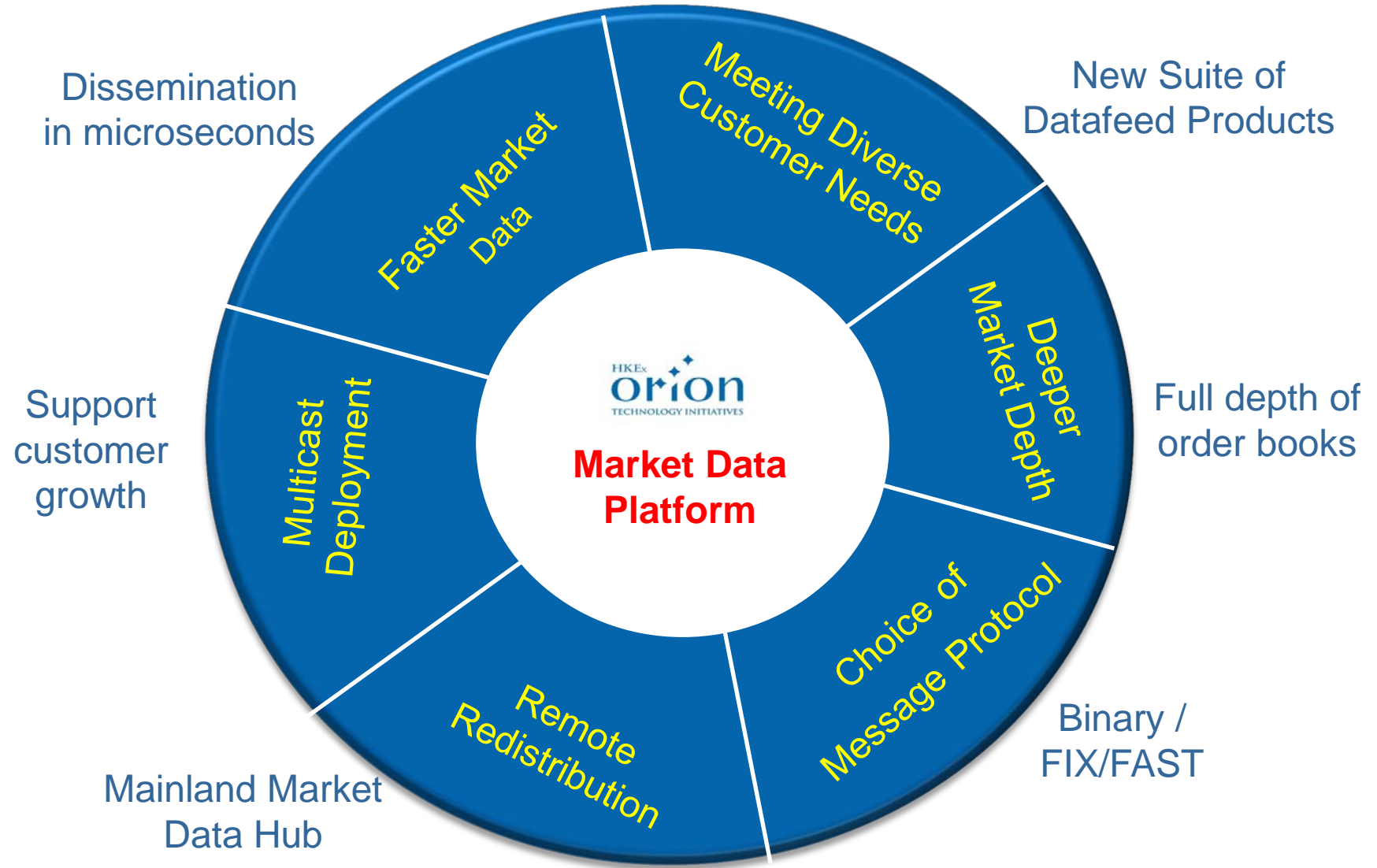
Rollout Phases

HKEEx Orion Market Data Platform

- Single, integrated platform
- Low-latency
- Multiple feeds
- Multiple asset classes
- Common message protocol



Key Features



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Overview of HKEx Orion

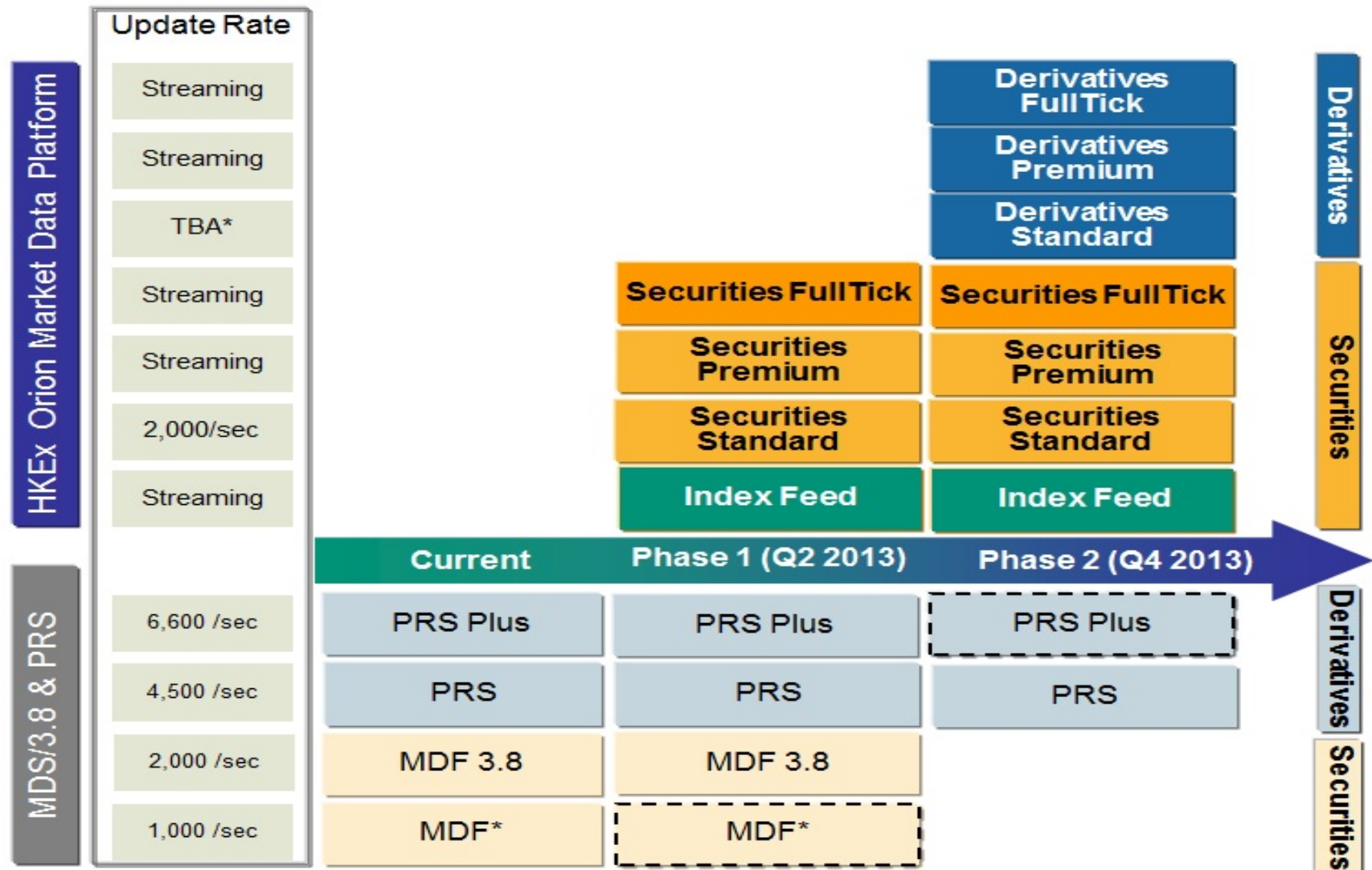
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Overview of HKEx Orion Market Data Platform

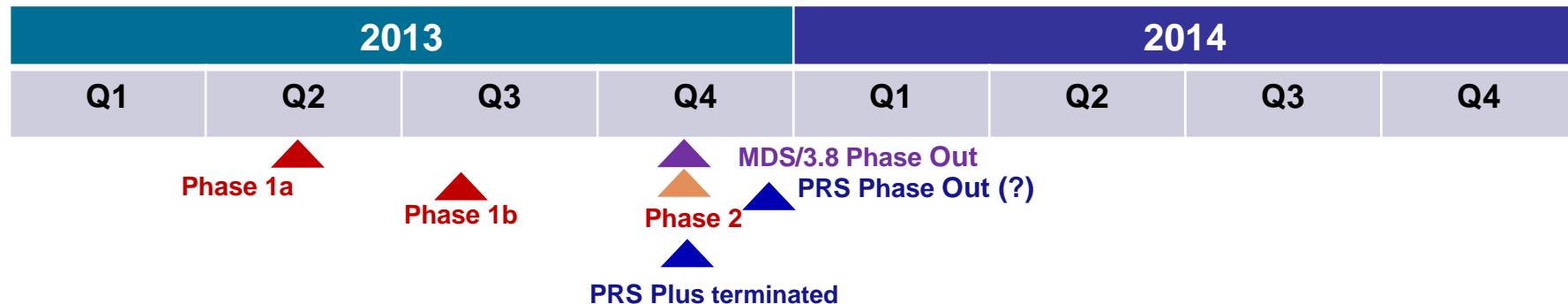
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Rollout Phases

Datafeed Product Road Map



New Datafeeds Rollout & Legacy Feeds Decommissioning



Phase 1a – Securities Market (Q2 2013)

MDS/3.8 & MDF* Unicast Feeds

Securities Multicast Feeds

Phase 1b – Mainland Market Data Hub (Q3 2013)

Mainland Market Data Hub – Securities Unicast Feeds

Phase 2 – Derivatives (Q4 2013)

PRS & PRS-Plus Unicast Feeds

Derivatives Multicast Feeds

Product Features and Implementation

Winnie Poon
Business Development
Market Data Department



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Product Suites of HKEx Orion Market Data Platform

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Securities Market & Index Datafeed Products

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Highlights on Difference between Securities Standard and MDF 3.8

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Mainland Market Data Hub

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Securities Market Implementation & Schedule

Product Suites of HKEx Orion Market Data Platform

Datafeed Product		Update Rate	Content
Securities Market			
1.	Securities <i>Standard</i> (“SS”)	2,000 messages per second	Market by price (10 levels)
2.	Securities <i>Premium</i> (“SP”)	Streaming	Market by price (10 levels)
3.	Securities <i>FullTick</i> (“SF”)	Streaming	Market by order (tick-by-tick full depth)
Derivatives Market*			
1.	Derivatives <i>Standard</i> (“DS”)	TBA	Market by price (10 levels)
2.	Derivatives <i>Premium</i> (“DP”)	Streaming	Market by price (10 levels)
3.	Derivatives <i>FullTick</i> (“DF”)	Streaming	Market by order (tick-by-tick full depth)
Index Data			
1.	Index Feed	Streaming, subject to the source	S&P/HKEx indices and selected indices from HSIL & CSIC

* Derivatives data plan will be finalized after detailed design study by end 2012.

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Securities Market Implementation & Schedule

Securities Market & Index Datafeed Products

Datafeed Product		Update Rate	Content	Estimated Bandwidth (preliminary estimation only)	
				Binary	FIX/FAST
1.	Securities Standard (“SS”)	2,000 messages per second	Level 1 (Bid/ask quotations), <i>all trade tickers</i> (HH:MM:SS) Level 2 (10 market depths) <i>Broker queues</i>	10Mbps - Real-time: 7Mbps - Refresh: 3Mbps	7Mbps - Real-time: 5Mbps - Refresh: 2Mbps
2.	Securities Premium (“SP”)	Streaming	Level 1 (Bid/ask quotations), <i>all trades</i> (HH:MM:SS) Level 2 (10 market depths)	50Mbps - Real-time: 41Mbps - Refresh: 9Mbps	40Mbps - Real-time: 33Mbps - Refresh: 7Mbps
3.	Securities FullTick (“SF”)	Streaming	Individual order information (price, quantity & type of each order) <i>all trades</i> (HH:MM:SS) Auction session: no order information, but IEP & IEV	20Mbps - Real-time: 10Mbps - Refresh: 10Mbps	14Mbps - Real-time: 7Mbps - Refresh: 7Mbps
4.	Index Feed	Streaming subject to the source	S&P/HKEx indices and selected indexes from CSIC and HSIL	1Mbps	1Mbps

Complimentary Service Feeds to follow.....

Remarks: We anticipate that FIX/FAST will be fractionally slower, and test results will be shared with the market at a later date.

Securities Market & Index Datafeed Products (Cont.)

Datafeed Product	Update Rate	Content	Estimated Bandwidth (preliminary estimation only)	
			Binary	FIX/FAST
Complimentary Service Feeds				
1. Conflated Broker Queue (“CBQ”)** <i>- Complimentary to SP</i>	2,000 messages per second	Broker queues	6Mbps - Real-time: 4Mbps - Refresh: 2Mbps	5Mbps - Real-time: 3Mbps - Refresh: 2Mbps
2. Odd Lot Order (“OLO”) <i>- Complimentary to SS, SP and SF</i>	Streaming	Odd lot market by order information	50Kbps	50Kbps

**** Important Messages for carrying CBQ with SP:**

- Service level between conflated feed and streaming feed is different.
- Not encouraged to provide the conflated broker queue along with the streaming market depth due to the possible synchronization issue.
- Disclaimer to highlight the service level is a MUST.

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Highlights on Difference between Securities *Standard* and MDF 3.8



DATA CONTENT	Securities <i>Standard</i>	MDF 3.8
Real-time Data Content	<p><u>Securities market data:</u></p> <ul style="list-style-type: none"> All trade tickers (timestamp: HH:MM:SS) Odd Lot market by order information in separate feed (OLO) <p><u>Third party content:</u></p> <ul style="list-style-type: none"> No third party content (index data in separate feed) 	<p><u>Securities market data:</u></p> <ul style="list-style-type: none"> All trade tickers (timestamp: HH:MM) Odd Lot market by price information included <p><u>Third party content:</u></p> <ul style="list-style-type: none"> Selected CSIC, HSIL and S&P co-branded indices HKFE Futures Products
Static Data Content	<p><u>Legacy features / data fields no longer provided in SS:</u></p> <ul style="list-style-type: none"> Securities Short Name in Big 5 Intra-day shortselling field Automatch Flag field Market Trading Timetable Spread table Information Pages (e.g. 785, 788 etc.) Linked security information Certain instrument specific static data fields with “blank” value under XF element type of MDF 3.8 <p><u>New items in SS:</u></p> <ul style="list-style-type: none"> FX rates <p><u>Change to the following data fields in SS:</u></p> <ul style="list-style-type: none"> Securities Short Name in Traditional Chinese coded in GCCS will be changed to Unicode including HKSCS (Hong Kong Supplementary Character Set) Securities Short Name in Simplified Chinese coded in GB will be changed to Unicode 	

Highlights on Difference between Securities *Standard* and MDF 3.8 (cont.)

TECHNICAL ASPECT	Securities Standard	MDF 3.8
Stock Update Rate (subject to further upgrade)	2000 stock pages per second	2000 stock pages per second
Message Protocol	<ul style="list-style-type: none"> Binary (proprietary & similar to UTP-MD) FIX/FAST 	Binary (HKEx proprietary)
Transmission Protocol	Multicast	Unicast
Bandwidth Requirement	10Mbps	6Mbps
Recovery	<ol style="list-style-type: none"> Retransmission (unicast) – recovery of small amount of message lost. Refresh (multicast) – available on a periodic snapshot basis throughout the day. Some bandwidth has been allocated for recovery and so normal data transmission is not affected while Refresh is in progress. 	<ol style="list-style-type: none"> Retransmission – recovery from the last received message Completed database download – provide latest market data image for recovery from long service interruption or late connection to MDS/3.8.

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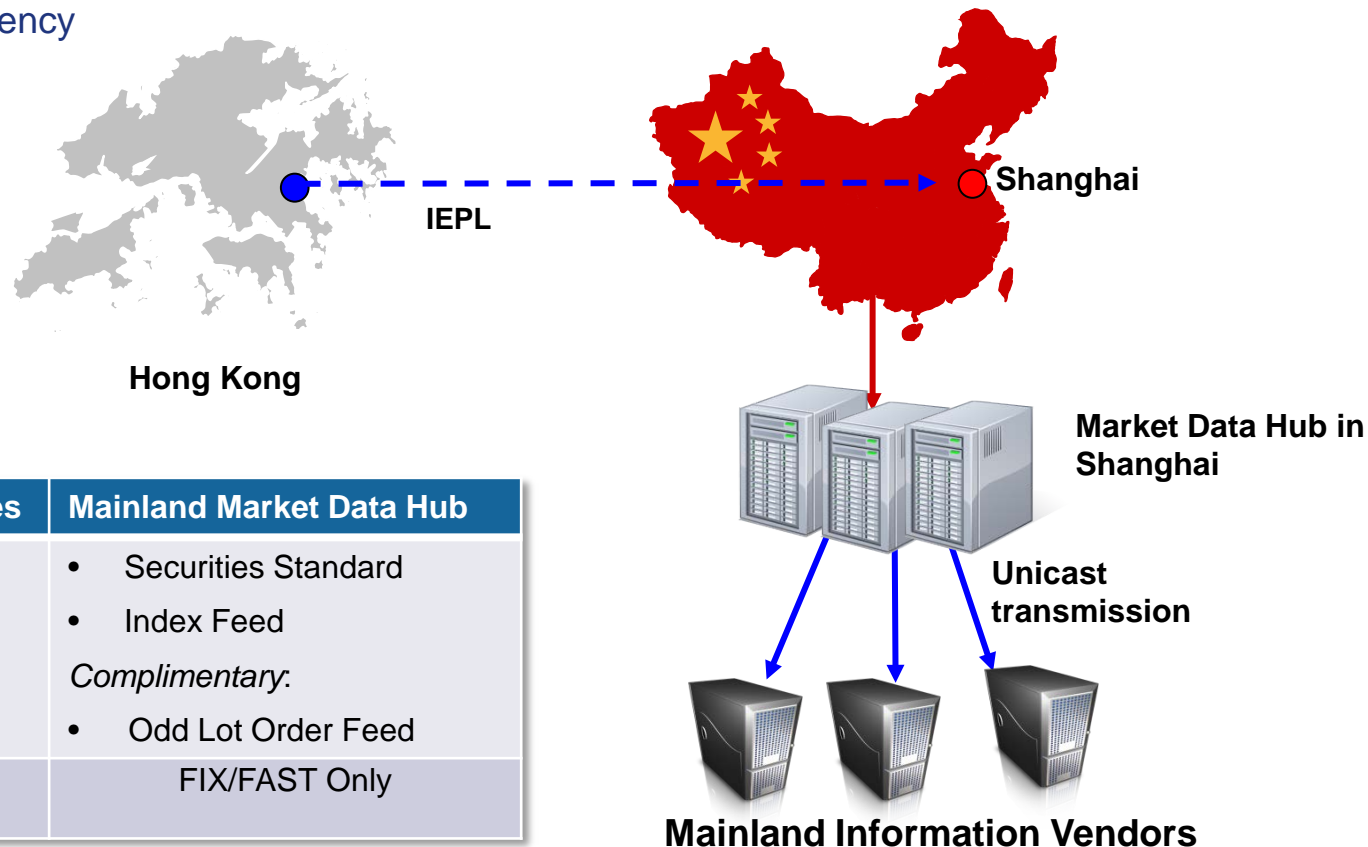
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Securities Market Implementation & Schedule

Mainland Market Data Hub

The first infrastructure footprint in Mainland China

- ◆ More cost-effective solution direct access solution to Mainland Ivs
- ◆ Higher resilience
- ◆ Full set of HKEx data
- ◆ Lower latency



Key Features	Mainland Market Data Hub
Datafeeds Available	<ul style="list-style-type: none"> • Securities Standard • Index Feed <p><i>Complimentary:</i></p> <ul style="list-style-type: none"> • Odd Lot Order Feed
Message Protocol	FIX/FAST Only

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Securities Market Implementation & Schedule

Securities Market Implementation



Implementation Schedule

Securities Market Implementation	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013
Regular Information Sessions						
Publication of Interfaces Specifications						
Fees Announcement						
Feed Enrollment						
Distribution of On-boarding Tools (including simulator and canned data)						
System Preparation by Customers						
Line Installation						
Open Test and Certification Test						
Market Rehearsals						
Post Release Test						
Securities Market Data Rollout						

Enquiry Contact for HKEx Orion Market Data Platform

Website: www.hkex.com.hk/MarketData

Project Enquiry Email : OrionMarketData@hkex.com.hk

Contacts from Business Development of Market Data Department:

Ms. Maggie Man :
Tel: (852) 2840 3650 **Email: MaggieMan@hkex.com.hk**

Ms. Winnie Leung :
Tel: (852) 2840 3611 **Email: WinnieLeung@hkex.com.hk**