



HKEx Market Data Business

Market Data, Global Markets Division
Winnie Sin, Vice President

April 2014



1. HKEx Market Data – 2013 Key Achievements and 2014 Updates
2. Orion Market Data Platform
3. Introduction on HKEx Hosting Services
4. Marketing Programme for New Derivatives Products
5. Non-Display Usage Policy

2013 Market Data Overview



Introduced Non-Display Usage Policy effective 1 January 2013

Successfully launched HKEx Orion Market Data Platform for Securities Market (OMD-C) on 30 September 2013

Launched new historical securities and derivatives data products for subscription, including its new Historical Full Book (Securities Market) product on 30 September 2013

Introduced the Founding Member Programme for the OMD Mainland Market Data Hub (MMDH)

Introduced the Marketing Programme for New Derivatives Products

Launched MMDH on 3 March 2014

Retired MDF 3.8: all information vendors and end-users have migrated to OMD-C

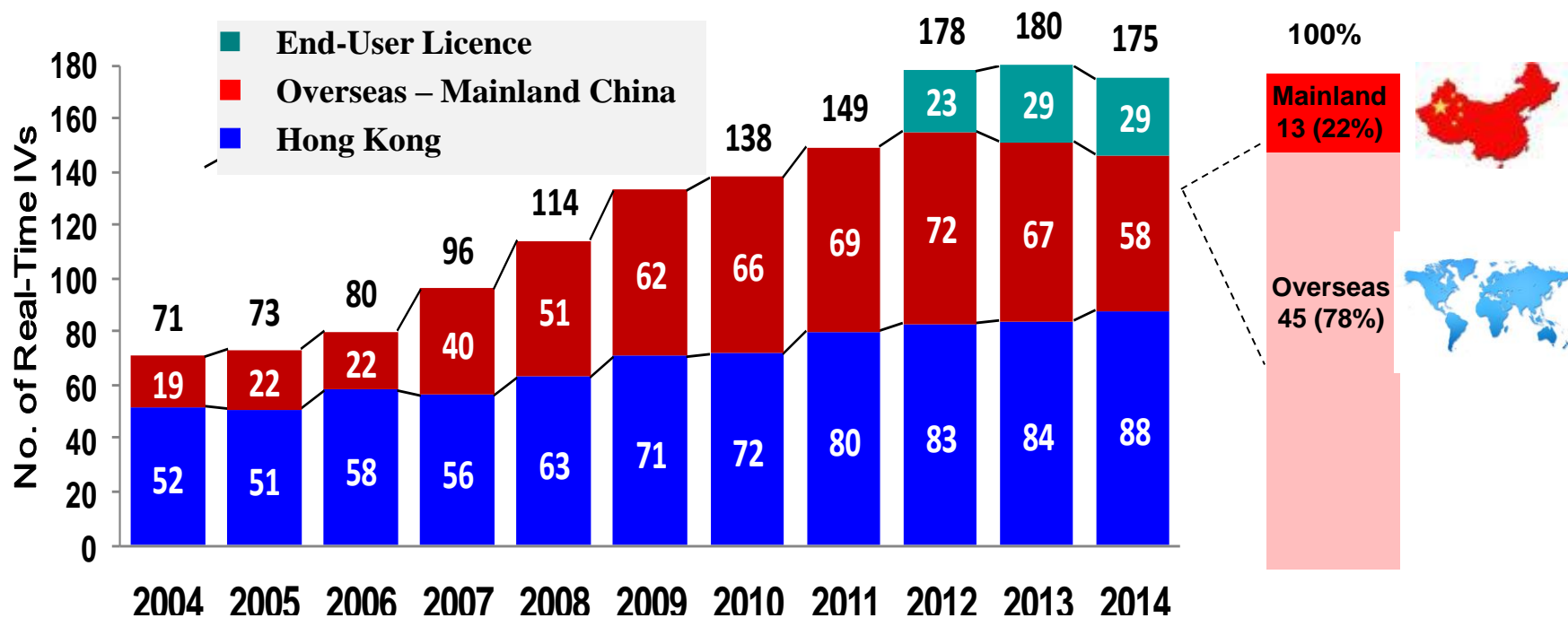
Review Non-Display Usage Policy by studying the possibility to introduce group fees

Introduce Historical Data Redistribution Licence

Launch the Orion Market Data Platform for Derivatives Market (OMD-D)

Market Overview – Number Real-time Data Vendors

As of Feb 2014



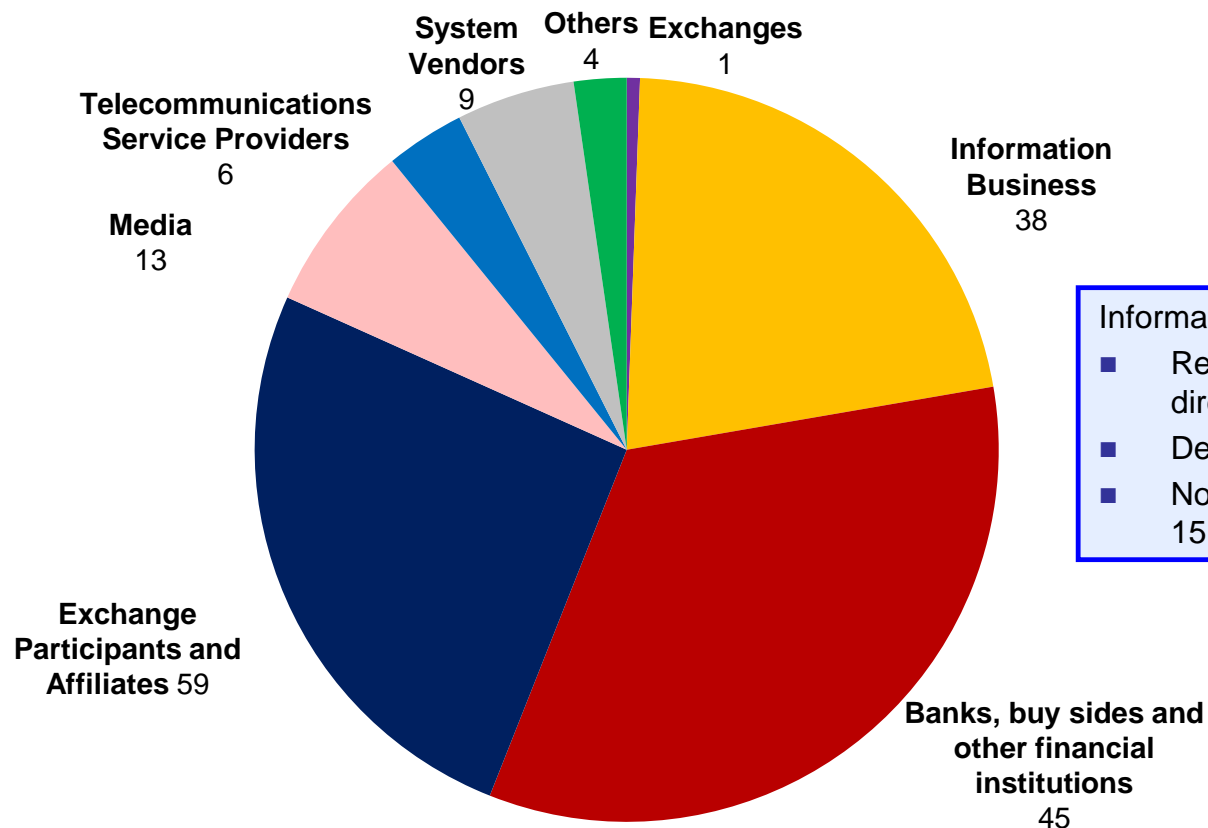
Information Vendors from Mainland China:

- Real-Time - 13 (in which 5 of them have direct connections)
- Delayed - 24
- No. of terminals from Mainland China: 15,135

Total 175 real-time data vendors

Market Overview – Real-time Data Vendors by Business Types

As of Feb 2014



Total 175 real-time data vendors

Information Vendors from Mainland China:

- Real-Time - 13 (in which 5 of them have direct connections)
- Delayed - 24
- No. of terminals from Mainland China: 15,135

Real-time data vendors are from diversified background.

List of Real-Time Mainland Information Vendors



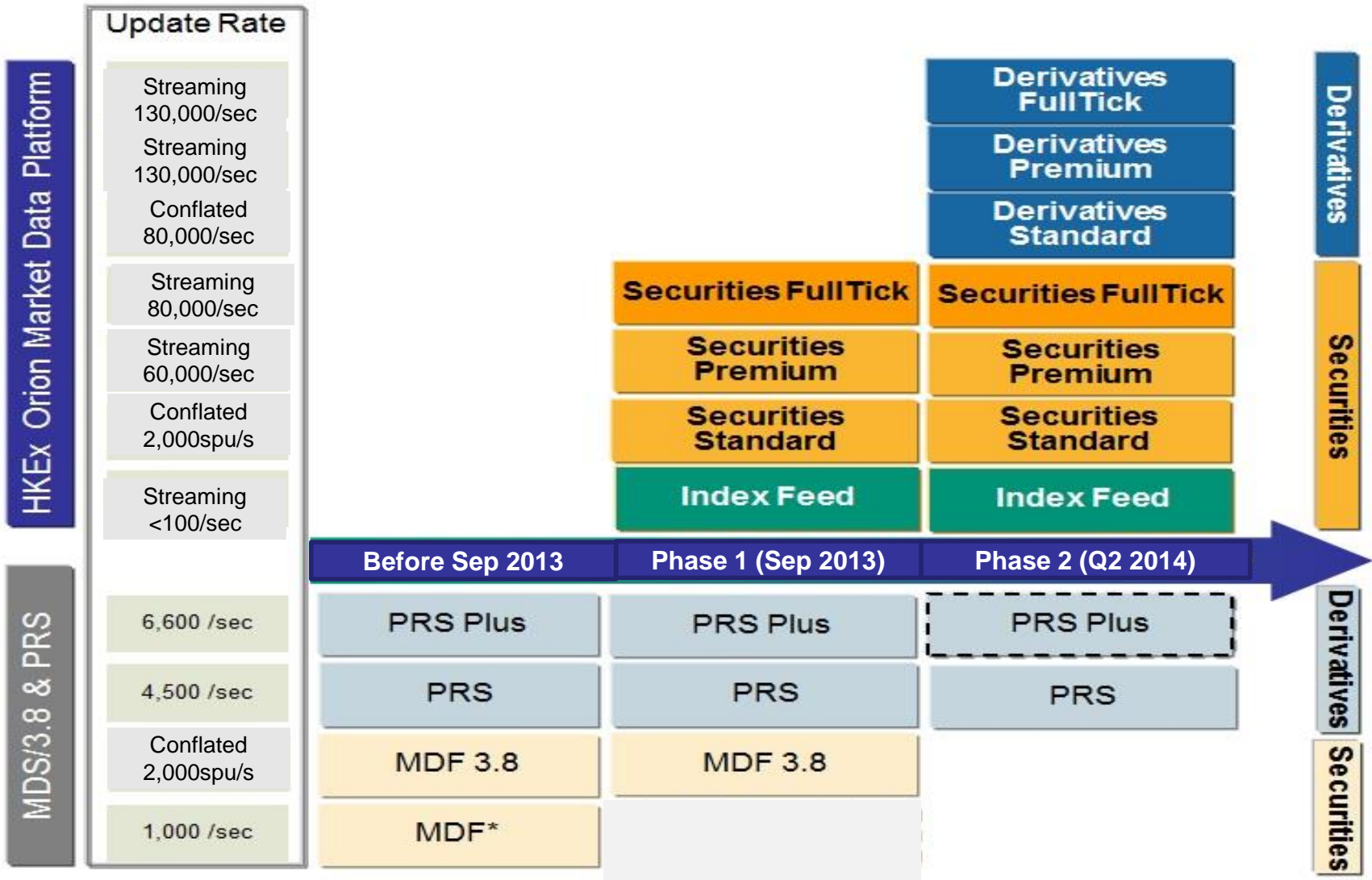
As of Feb 2014

Mainland Information Vendors:

- Real-Time IVs with securities data - 12, among the 12 IVs, 6 also has real-time licence for derivatives data
- Real-Time IVs with derivatives data - 1
- Delayed IVs - 24

1. HKEx Market Data – 2013 Key Achievements and 2014 Updates
2. Orion Market Data Platform
3. Introduction on HKEx Hosting Services
4. Marketing Programme for New Derivatives Products
5. Non-Display Usage Policy

OMD Datafeed Products Road Map



OMD-C Product Positioning



Securities Standard ("SS")

- On par with OG & MDF3.8 datafeed in data contents and update rate

Securities Premium ("SP")

- Low latency datafeed
- Comprehensive market information with statistics, news etc.
- Fit for automatic trading applications

Securities FullTick ("SF")

- Low latency datafeed
- Provide full order information*
- Dissemination of individual orders and trades
- User can build order book and compile market statistics

* No order information is however available during auction session.

OMD-D Product Positioning

Derivatives Standard ("DS")

- Conflated datafeed
- Replacement service for PRS with shorter update interval for DS, only half of the interval between PRS updates or lower.
- Comparable category of latency and content per HKATS NG

Derivatives Premium ("DP")

- Low latency datafeed
- Replacement service for PRS-Plus, with shorter update interval for DP as the updates of which is driven by any order changes on streaming basis.
- Fit for automatic trading applications

Derivatives FullTick ("DF")

- Low latency datafeed
- Provide full order information*
- Dissemination of individual orders and trades
- User can build order book.

* No order information is however available during auction session.

Securities Market & Index Datafeed Products



Datafeed Product		Message Rate	Content	Bandwidth Requirement
1.	Securities Standard ("SS")	Conflated. 2,000 stock page updates per second	<u>Market by price (10 levels)</u> Level 1 (Bid/ask quotations), all trade tickers (HH:MM:SS) Level 2 (10 market depths) Broker queues	10Mbps
2.	Securities Premium ("SP")	Streaming. 40,000 messages per second	<u>Market by price (10 levels)</u> Level 1 (Bid/ask quotations), all trades (HH:MM:SS) Level 2 (10 market depths)	30Mbps
3.	Securities FullTick ("SF")	Streaming. 60,000 messages per second	<u>Market by order (tick-by-tick full depth)</u> Individual order information (price, quantity & type of each order) all trades (HH:MM:SS) Auction session: no order information, but IEP & IEV	30Mbps
Complimentary Service Feeds				
1.	Conflated Broker Queue ("CBQ")** <i>- Complimentary to SP</i>	2,000 messages per second	Broker queues	6Mbps
2.	Odd Lot Order ("OLO") <i>- Complimentary to SS, SP and SF</i>	Streaming	Odd lot market by order information	50Kbps
Optional Product				
1.	OMD-Index (Market Neutral)	<100 messages per second	S&P/HKEX indices and selected indices from CESC, CSIC and HSIL	1Mbps

Derivatives Market Datafeed Products

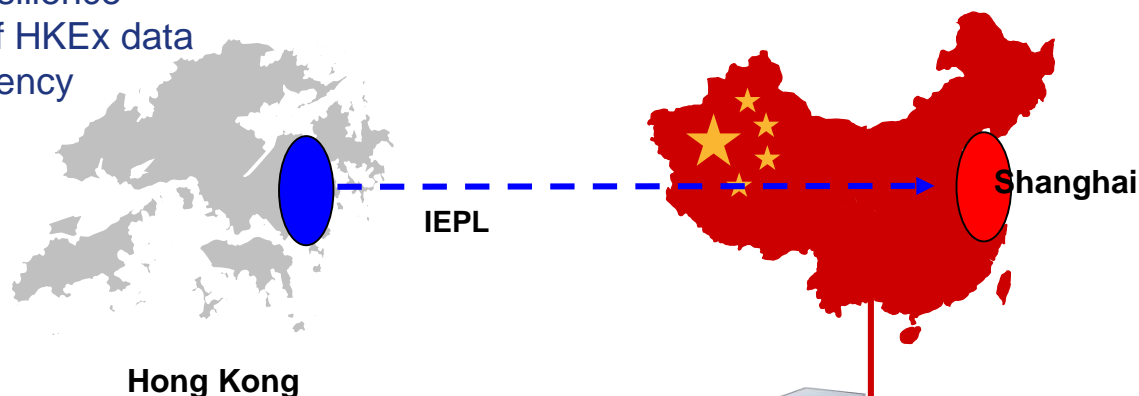


Datafeed Product		Message Rate	Content	Bandwidth Requirement		
				Non-Stock Options Market	Stock Options Market	Total
1	Derivatives Standard ("DS") - plus Derivatives Trades (DT)	120,000 messages per second	<u>Market by price (10 levels)</u> Conflated update on: - Level 1 (bid/ask quotations) - Level 2 (market by price with 10 market depths) - Trade statistics <i>Plus complimentary DT:</i> Streaming update on: - Individual trades and trade amendments	4Mbps	19Mbps	23Mbps
2	Derivatives Premium ("DP")	200,000 messages per second	<u>Market by price (10 levels+1)</u> Streaming update on: - Level 1 (bid/ask quotations) - Level 2 (market by price with 10 market depths + 11th aggregating remaining book) - Individual trades and trade amendments	7Mbps	40Mbps	47Mbps
3	Derivatives FullTick ("DF")	200,000 messages per second	<u>Market by order (tick-by-tick full depth)</u> Streaming update on: - Market by order information - Individual trades and trade amendments - Auction Session: no order information, but COP & equilibrium volume	6Mbps	34Mbps	40Mbps
Optional Product						
1	OMD-Index (Market Neutral)	<100 messages per second	S&P/HKEx indices and selected indexes from CESC, CSIC and HSIL. <i>(Remarks: OMD Index Feed has been rolled out with OMD-C in Sep 2013)</i>			1Mbps

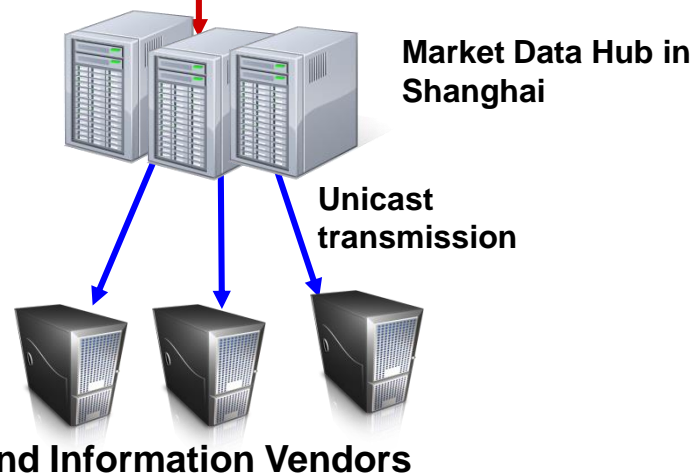
Remarks: Bandwidth requirement has accommodated the projected increase in data volume generated from the upgraded trading system.

The first infrastructure footprint in Mainland China - Mainland Market Data Hub (MMDH)

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



Address	Mainland Market Data Hub
Primary Data Centre	Huajing Road, Waigaoqiao Bonded Zone, Shanghai
Secondary Data Centre	Longchang Road, Yangpu Zone, Shanghai



5 Mainland Information Vendors have successfully connected to OMD-C via MMDH

Founding Members



AAStocks.com Limited / Shanghai DZH Co., Ltd



Shanghai Emoney Software Technology Co., Ltd



Sina Hong Kong Limited / Beijing Sina Internet Information Service Company Limited



Tencent Holdings Limited



East Money Information Co., Ltd



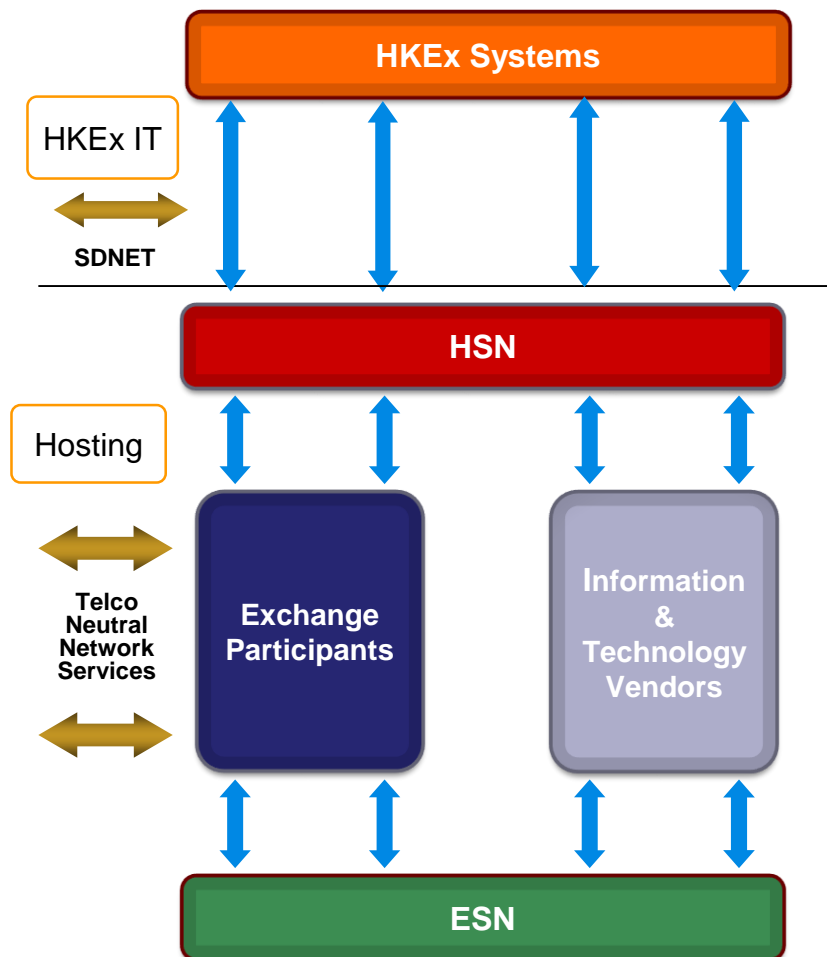
Hexin Flush Financial Information Network Ltd.
(Application in progress)

1. HKEx Market Data – 2013 Key Achievements and 2014 Updates
2. Orion Market Data Platform
3. **Introduction on HKEx Hosting Services**
4. Marketing Programme for New Derivatives Products
5. Non-Display Usage Policy

HKEx Service Network (HSN)



HKEx offers Hosting Services, including low-latency co-location with HKEx markets which allows access to HKEx core systems. Customers can enjoy access to an array of information, technology and network service providers within a secure ecosystem environment.



- **HKEx Service Network (HSN)**
 - provide eligible users consolidated connection to HKEx market data, trading and clearing systems
- **Ecosystem Network (ESN)**
 - enable users to access services on offer by other ecosystem members
- **Cross Connections (XCN)**
 - put ecosystem members in touch through direct copper or fiber connection

Derivatives Market Data



Available upon OMD-D launch (Q3 2014)

Data Content	Level 1 data	Level 2 data	Level 2+ one data	Full Book data
Monthly subscriber fee	HK\$25/M	HK\$75/M	HK\$90/M	HK\$300/M
Calculated Day High and Day Low	Y	Y	Y	Y
Best Bid/Ask Prices and Quantity	Y	Y	Y	Y
Last Traded Price and Volume	Y	Y	Y	Y
Cumulative Volume	Y	Y	Y	Y
Calculated Opening Price (COP)	Y	Y	Y	Y
Price Depth Aggregated volume and bid/ask prices for the best five orders <i>(best ten orders upon launch of OMD-D)</i>		Y	Y	Y
Aggregated no. and volume (shares) of all orders beyond 10 level order depth			Y	Y
All order information				Y

衍生产品系列



种类	指数	期货	期权
股市指数	<p><u>恒指系列：</u></p> <ol style="list-style-type: none"> 恒生指数 Hang Seng Index 恒生香港中资企业指数 Hang Seng China Enterprises Index 恒生中国企业指数 Hang Seng China Affiliated Corporations Index 恒生工商业分类指数 HSI Sub Indices – Commerce & Industry 恒生金融分类指数 HSI Sub Indices – Finance 恒生地产分类指数 HSI Sub Indices – Property 恒生公用事业分类指数 HSI Sub Indices – Utilities 恒指波幅指数 HSI Volatility Index (VHSI) <p><u>中华交易服务恒指系列：</u></p> <ol style="list-style-type: none"> 中华交易服务中国120指数 CES China 120 Index 中华交易服务中国A80指数 CES China A80 Index 中华交易服务中国香港内地指数 CES China HK Mainland Index <hr/> <ol style="list-style-type: none"> 中证指数系列 上证指数系列 	<ol style="list-style-type: none"> 恒生指数期货 Hang Seng Index Futures H股指数期货 H-shares Index Futures 小型恒生指数期货 Mini-Hang Seng Index Futures 恒指股息点指数期货 HSI Dividend Point Index Futures 恒指波幅指数期货 HSI Volatility Index (VHSI) Futures 小型H股指数期货 Mini H-shares Index Futures H股股息点指数期货 H Shares Dividend Point Index Futures 中华交易服务中国120指数期货 CES China 120 Index Futures 印度/俄罗斯/南非/巴西指数期货 BRICS Futures 恒生国企股息点指数期货 HSCEI Dividend Point Index Futures 	<ol style="list-style-type: none"> 恒生指数期权 Hang Seng Index Options 小型恒生指数期权 Mini-Hang Seng Index Options 恒生指数自定义条款指数期权 Flexible Hang Seng Index Options H股指数期权 H-shares Index Options H股指数自定义条款指数期权 Flexible H-shares Index Options
个股		- 个股期货	- 个股期权
外汇		- 人民币货币期货	

Programme Details

Comprehensive benefit package for IVs and investors



Programme Duration	From now to 31 December 2015
Regions	Mainland China, Japan, Korea, Singapore and Taiwan
Basic Requirement	Display data of at least two of the following products: <i>HKEx CNH currency futures, CESC index futures and other new products including commodities futures</i>

Benefits

Redistribution Fee

WAIVED

Requirements:

- complete the applications by 31 March 2014; and
- derivatives data subscribers are within the Regions only

Subscriber Fee

Streaming Level 1 Data

WAIVED

Requirement:

- subscribers restricted to clients of the Regions only

BMP Service

WAIVED

Requirement:

- BMP Website shall include a version in local language of one of the Regions

Programme Details

Participating Vendors



**There are a total of 12 Mainland vendors participating in the marketing programme
(as of Feb 2014)**

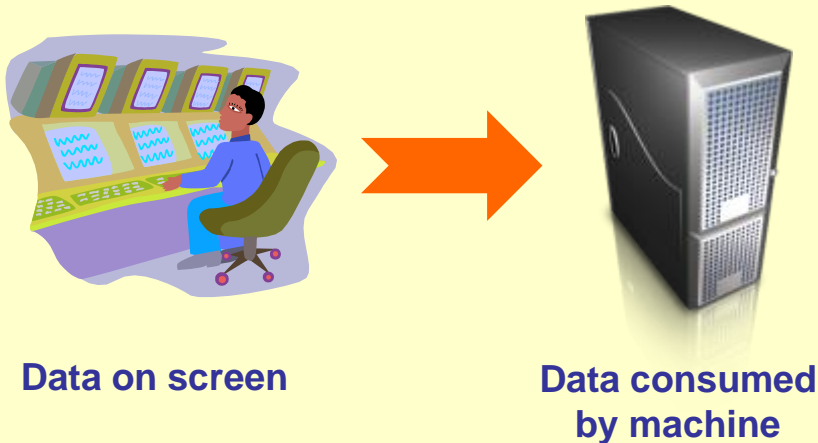
- AASStocks.com Limited / Shanghai DZH Co., Ltd
- CapitalVue Limited
- CES Finance Holding Co. Ltd.
- East Money Information Co., Ltd
- Hithink RoyalFlush Information Network Co.,Ltd.
- Shanghai Fuyoo Software Tecnology Co., Ltd*
- Shanghai Pobo*
- Shanghai Qianlong Advanced Technology Co., Ltd
- Shanghai Wind Information Co Ltd
- ShenZhen FortuneTrend Tech Co.Ltd
- Webstock Information Systems Limited*
- Zhengzhou Esunny Information Technology Co., Ltd.

* Vendor Licence application in progress

1. HKEx Market Data – 2013 Key Achievements and 2014 Updates
2. Orion Market Data Platform
3. Introduction on HKEx Hosting Services
4. Marketing Programme for New Derivatives Products
5. **Non-Display Usage Policy**

Fees for Non-Display Usage – Background

Why are non-display usage fees required?



Exchanges that have introduced non-display pricing policy....

Deutsche Borse
NASDAQ
Swiss SE
London Stock Exchange
Toronto Stock Exchange
Australian Stock Exchange
Tokyo Stock Exchange
HKEX
Singapore Stock Exchange

Introduce Non-Display Usage Fees to respond to market changes and align with market trend.

Background of Non-Display Usage Policy

Key Features



International



HKEx



Scope of Fee Items

By activities vs. bundled package

By activities:

- Automated trading applications
- Derived data with tradable products
- Others

Data Content

By different content vs. same fees for all content

Same fees for all content

Unit of Count

By no. of applications vs. firm /group

By firm

Fee Level

Varies substantially

Close to market average fee

Non-Display Usage Policy



When?

- Non-display usage fee became effective from January 2013

Who?

- Licensed Information Vendors (IVs), Licensed End-Users (EUs), IV's subscribers and Exchange Participants (EPs) who access and use HKEx real-time market data for non-display usage are subject to the new Fees.

How?

- The new fees are charged based on the following 3 categories:
 - Automated Trading Application
 - Derived Data (with Tradable Products)
 - Others

Fee Schedule for Non-display usage

	Real-Time	
	Securities Data	Derivatives Data
Automated Trading Applications	\$20,000 per firm per month	\$10,000 per firm per month
Derived Data with Tradable Products	\$20,000 per firm per month	\$10,000 per firm per month
Others	\$400 per firm per month	\$150 per firm per month

Guiding Note on Non-Display Usage is published on HKEx website:

- Products & Services > Data Products > Licences > Licence Agreement & Guiding Notes (Vendor Licence) > Guiding Notes
(http://www.hkex.com.hk/eng/prod/dataproduct/la/licagt/gn/GuidingNotes_MDVLA.htm)

1 Automated Trading Application

Any application that accesses HKEx real-time market data for automatic calculation, processing and analysis, and that application will determine the quantity, price and timing of order execution, will be regarded as the Automated Trading Application.

Examples include:

- Algorithmic trading
- but exclude:
- Online trading platform where orders are initiated by human

3 Others

Any other non-display data usage that does not fall under Category (1) & (2)

Examples include:

- Risk management systems
- Portfolio management applications
- Back office support etc.

(EPs will be exempted from this category of fee)

2 Derived Data (with Tradable Product)

Any work created using HKEx real-time market data to partly or wholly derive the price of a tradable product or value of the underlying instrument of a tradable product.

Examples include:

- Calculation of Indices with tradable products (e.g. HSI, FTSE, MSCI etc.)
- Creation of investable instruments such as spread betting

Highlights on Non-Display Usage Policy Guiding Note:

- The new fees are charged at per firm level, based on the non-display usage of different Categories.
- IVs, EUs, IVs' Subscribers and EPs will only need to pay once for each category of non-display usage for multiple data sources.
- EPs are exempted from the new fees of category "Others", but are still required to report the usage.
- The new fees are applicable to the use of real-time data only.



Non-Display Usage Analysis

Non-Display Usage Analysis

Since policy rollout in Jan 2013



Policy Rollout

- HKEx announced the Non-Display Policy in July 2012 and effective in Jan 2013
- Introduced as new type of subscriber fees
- All datafeed users are required to submit declarations to HKEx

Reporting and Payment

- **Licensed information vendors (IVs) and end-users (EUs)**
 - Pay the fees directly to HKEx-IS
- **Subscribers of IVs**
 - Pay the fees via the IVs
 - Can make payment via one designated IV if multiple vendor subscription
- **Exchange Participants (EPs) that use cash market data from OG feed ⁽¹⁾**
 - Report and pay via the quarterly BSS declaration

Summary of Declarations

- As of Oct 2013, we received 250 declarations
- **121 firms** contributed Non-Display Usage

Non-Display Usage Analysis

Summary of Observations



Reported by 121 firms.

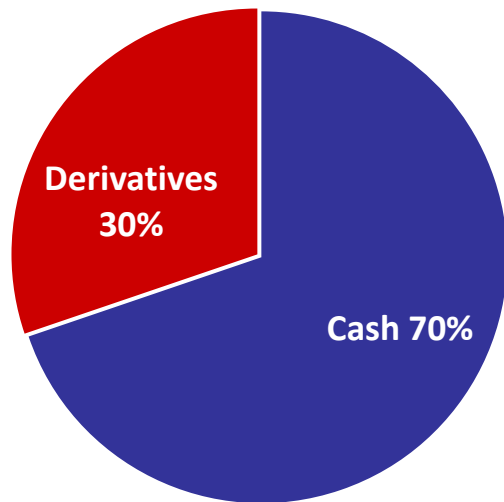
No significant drop in number of terminals by firms engaging in Non-Display activities

EPs and EP affiliates contribute majority of Non-Display Usage

Non-Display Usage Analysis

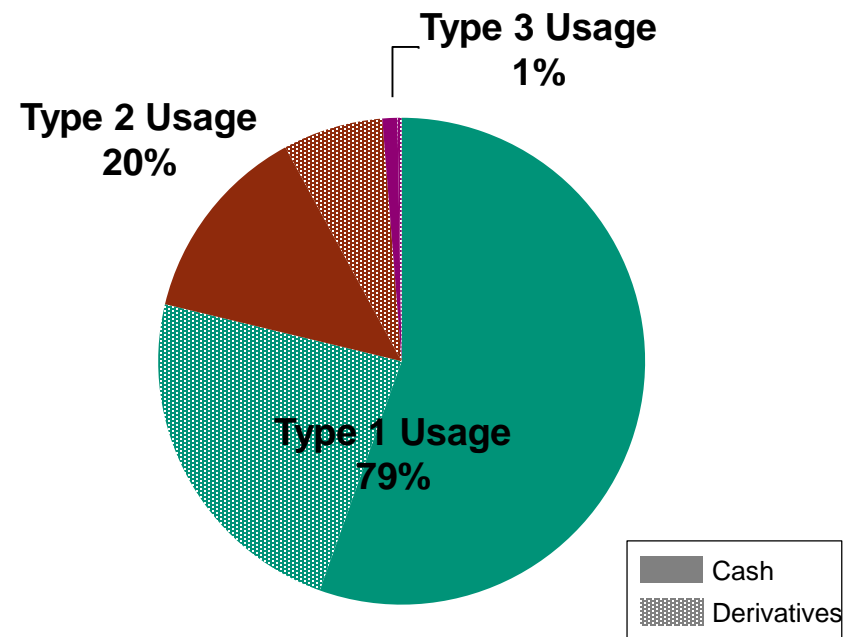
By Market and Usage Type

By Market



- **Cash Market contributes 70% of total usage**
- **Considerable no. of firms report usage on both cash and derivatives markets (\$1M by 32 firms)**

By Usage Type



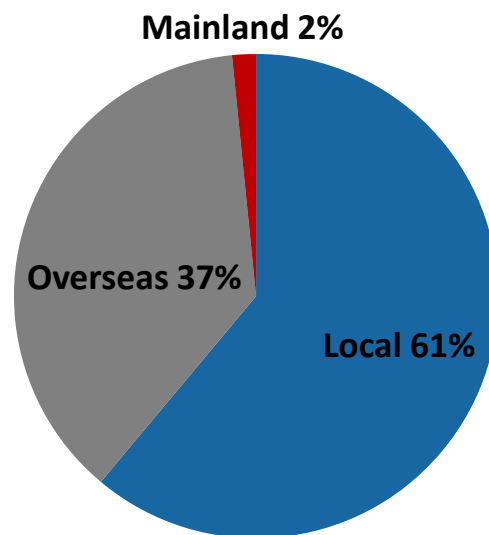
- Type 1 Usage: Automated Trading Application
- Type 2 Usage: Derived Data (with Tradable Products)
- Type 3 Usage: Others

Automated Trading Application (Type 1 Usage) contributes 79% of total usage

Cash Market Data – Profile Analysis

By Geographical Location

By Geographical Location

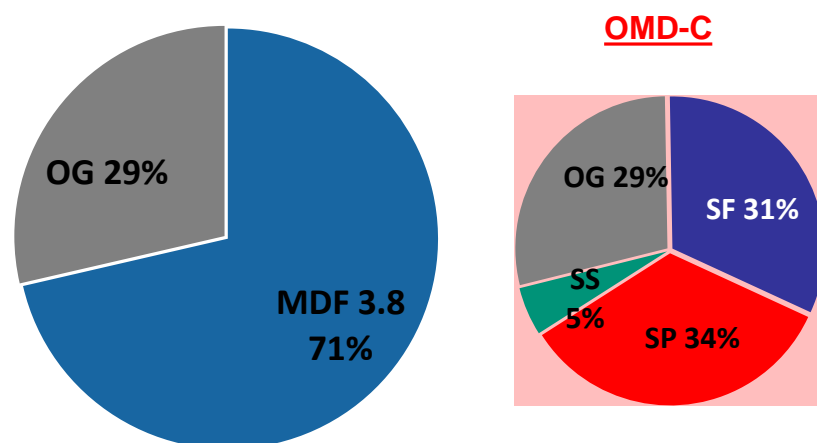


In Cash Market, local firms contribute double as much as overseas firms

Cash Market Data – Profile Analysis

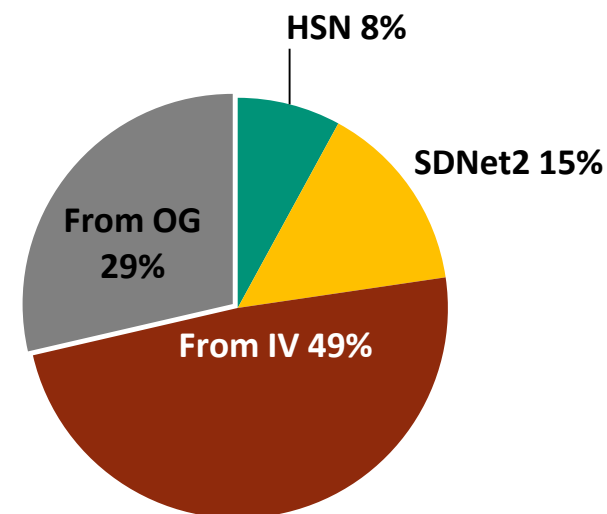
By Datafeed Product and Connection Type

By Datafeed Product



- Usage sourced mostly from MDF3.8 as OG is limited to SEHK EPs for internal use
- Most firms would migrate to SP or SF

By Connection Type



Inconclusive on firms' latency preference over market data connection. To conduct analysis again after rollout of all OMD phases

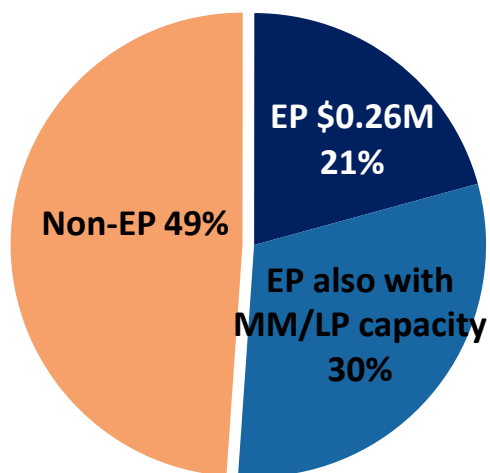
For firms subscribing to multiple OMD-C feeds, the following assumptions are made:

- For firms reporting Type 1 & Type 2 usage (\$20,000), we assume they choose the datafeed with highest cost
- For firms reporting Type 3 usage (\$400), we assume they choose the datafeed with lowest cost

Cash Market Data – Profile Analysis

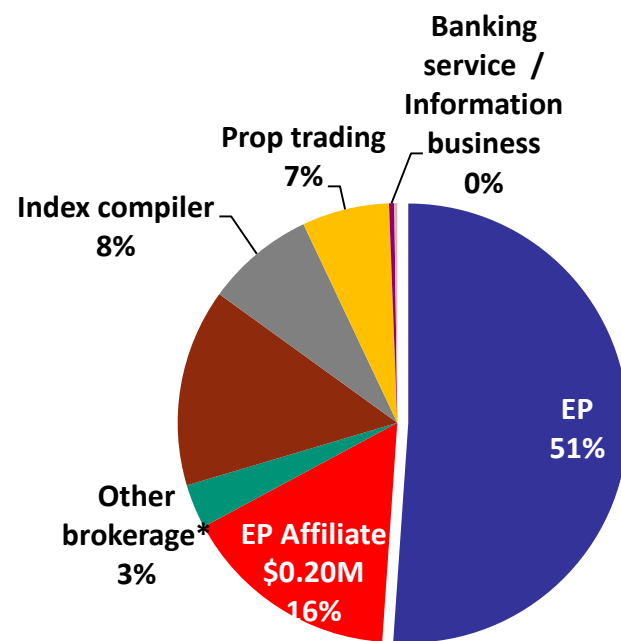
By EP capacity and Industry

By EP / MM capacity



EPs contribute over half of the usage

EP vs. Non-EP



* Includes brokerage firms that are not EP or EP affiliate

EPs, EP affiliates and other brokerage firms contribute 70% of Non-Display Usage fees collected

MM: Market Maker, applicable to SEHK, HKFE and Stock Options markets

LP: Liquidity Provider, applicable to SEHK only

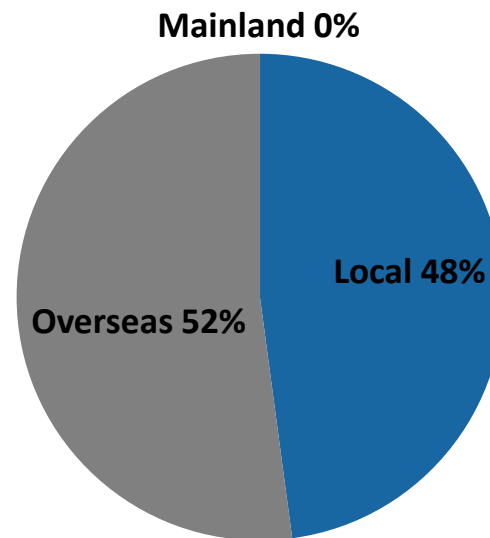
Industry: Firms categorized by industry based on desktop research on their corporate website. Please refer to Appendix VIII for illustration

Derivatives Market Data – Profile Analysis

By Geographical Location



By Geographical Location



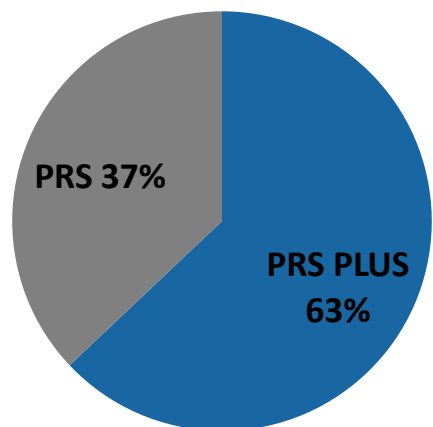
In Derivatives Market, overseas firms contribute even more than local firms

Geographical location: Based on the geographical location of the entity. As such, all EPs are categorized as local

Derivatives Market Data – Profile Analysis

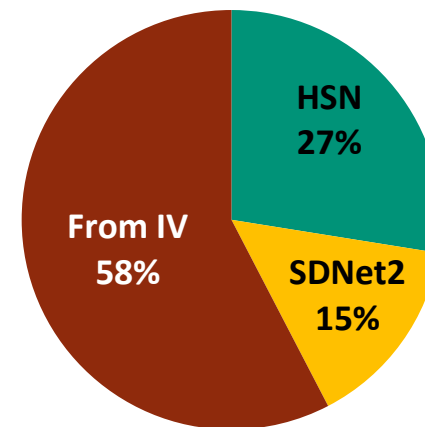
By Datafeed Product and Connection Type

By Datafeed Product



Usage sourced mostly from PRS Plus with a higher update rate than PRS

By Connection Type



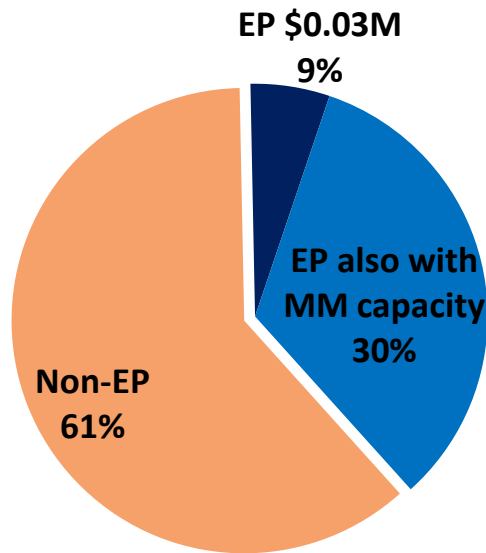
Inconclusive on firms' latency preference over market data connection. To conduct analysis again after rollout of all OMD phases

Derivatives Market Data – Profile Analysis

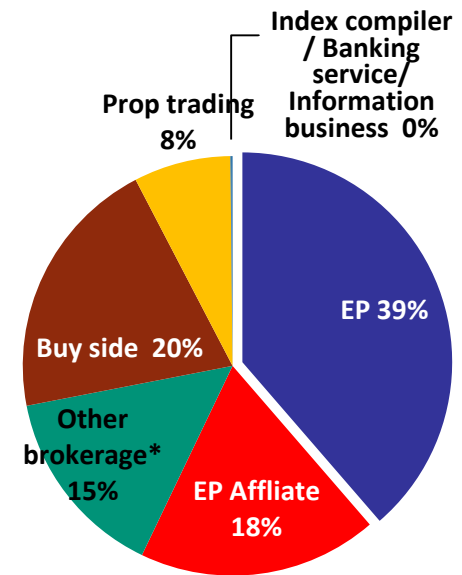
By EP capacity and Industry



By EP / MM capacity



EP vs. Non-EP



* Includes brokerage firms that are not EP or EP affiliates

Proportionally more usage from overseas financial firms

EPs, EP affiliates and other brokerage firms contribute 72% of Non-Display Usage fees collected

MM: Market Maker, applicable for SEHK, HKFE and Stock Options markets

Industry: Firms categorized by industry based on desktop research on their corporate website. Please refer to Appendix VIII for illustration

Summary of Market Feedbacks

- Discrepancies with global companies on the definition of “firm”
- Different exchanges have different Non-Display Usage policies. Companies may misinterpret our definitions and lead to reporting errors
- Some subscribers prefer to have direct contracts (to pay the fees directly to us) with HKEx-IS

Medium / Long Term Plan

- Continue to review market feedbacks, and potentially enhance policy such as
 - 1) To introduce fees for extension to group companies
 - 2) To streamline reporting and billing process
- More education to market participants on Non-Display policy
- Provide input to LME’s feasibility study on Non-Display policy
- Conduct usage analysis again after launch of all phases of OMD

Thank you

HKEx Corporate Website: www.hkex.com.hk
Designated Issuer Website: www.hkexnews.hk