

**Legislative Council Panel on Financial Affairs**

**Disruption of HKExnews Website Services and  
Suspension of Trading of Certain Issuers on 10 August 2011**

This note responds to the Legislative Council Panel on Financial Affairs' letter of 10 August 2011 in relation to the disruption of HKExnews Website services and suspension of trading of certain issuers on 10 August 2011.

2. The Hong Kong Exchanges and Clearing Limited ("HKEx") has prepared a report, at the Annex, on the relevant facts of the incident, the contingency measures adopted, cause of the technical problems, rectification measures and explanation on the suspension arrangement. The Securities and Futures Commission ("SFC") has discussed the report with HKEx. Its comments have been incorporated therein.

3. In relation to the remedial measures adopted by HKEx as set out in paragraphs 28 – 32 of the report, the SFC understands that "distributed denial of service" ("DDOS") hacking attack is one of the most common hacking attacks today. Even if the target web server has been installed with intrusion protection system ("IPS"), the hacker who launches a DDOS attack may modify the attack patterns to bypass the IPS. Inevitably all websites on the Internet are exposed to DDOS attack. Administrators of the target web servers need to respond quickly enough to modify their IPS to effectively block the hacking. The SFC understands from HKEx that it had put in place its IPS and during the incident, the IPS vendor had also modified the IPS to successfully block the hacking traffic. Nevertheless, the SFC believes that HKEx should review information security of its systems and web services more frequently and enhance its IPS to catch up with the latest hacking detection and prevention technology.

4. As regards HKEx's decision relating to trading suspension on 10 August 2011, the SFC supports the decision as the appropriate way to ensure and maintain an orderly, informed and fair market. Ensuring an orderly, informed and fair market is the statutory duty of the Stock Exchange of Hong Kong Limited under the Securities and Futures Ordinance ("SFO"). It is also one of the regulatory objectives of the SFC under the SFO.

5. Paragraphs 43 – 53 of the report set out the interim and long term measures relating to regulatory disclosures being taken or explored by HKEx. The SFC supports the immediate measures taken by HKEx to assist with the publication of regulatory disclosures and the intention to explore using the services of market participants, the media and mass publishing portals to distribute issuers' disclosures. However, the success of such proposals depends on whether third parties are willing to do so. The SFC will keep in view efforts made by HKEx and the need for other measures.

6. The SFC also supports the longer term measures to explore the feasibility and merits of alternative means for disseminating information and of a trading halt policy (i.e. allowing issuers to release information during trading hours accompanied by a short trading halt). Changes in these areas would require careful and comprehensive consideration and consultation with the market. Subject to any future review of the trading halt policy, the SFC believes that HKEx should consider enhancing the capability of its trading system so that the trading system can have the flexibility of supporting the operational needs of any changes to the trading halt policy.

7. The SFC also agrees with HKEx (paragraph 53 of the report) that it is necessary to improve investor education as to the measures that apply in the event of a failure of the HKExnews system, so that they are aware of how to keep themselves informed as to disclosures by issuers.

8. The Administration has registered its concern with the SFC about the incident. We have asked the SFC to follow up with HKEx to prevent recurrence of similar events, and to continue its market surveillance to ensure a fair and orderly market. The Administration has also noted HKEx's remedial measures, including those taken to enhance the security of HKExnews Website.

**Financial Services Branch  
Financial Services and the Treasury Bureau  
August 2011**

**Legislative Council Panel on Financial Affairs  
Disruption of HKExnews Website Services and  
Suspension of Trading of Certain Issuers on 10 August 2011**

**PURPOSE**

1. This paper provides information on issues relating to the disruption of HKExnews Website services incident of 10 August 2011.

**DETAILS**

**Introduction**

2. Hong Kong Exchanges & Clearing Limited (“HKEx”) publishes regulatory disclosures submitted by listed issuers on the HKExnews website ([www.hkexnews.hk](http://www.hkexnews.hk)) for mainboard companies and the Growth Enterprise Market (“GEM”) websites ([www.hkgem.com](http://www.hkgem.com)) for GEM board companies respectively (hereinafter collectively referred to as “HKExnews Website”).

3. Between approximately 11:00am and 8:00pm on 10 August 2011, the HKExnews Website had become unstable and for most of the time out of service under malicious hacking attacks. The HKExnews Website resumed normal service at around 8:00pm that evening. Due to the disruption of services to the HKExnews Website and under the current contingency plan and suspension policy, the trading of equity securities of seven issuers and their related structured products and stock options and futures was suspended in the afternoon of 10 August. During the incident, HKEx’s other systems including all core mission critical systems for trading and clearing had not been affected. Trading and clearing in securities and derivatives markets had remained in normal operation.

4. This paper will present to the Panel:
  - (a) As background, the current regulatory disclosure regime, the suspension policy and the trading resumption policy, and comparison thereof with selected overseas markets (Part I below);
  - (b) The intrusion attack on the HKExnews Website on 10 August (and thereafter), remedial actions taken by the HKEx and external anti-hacking experts in deterring such attacks and restoring the services of the HKExnews Website (Part II);
  - (c) The consequential impact on regulatory disclosures on 10 August and the decision on suspension (Part III); and
  - (d) The interim measures relating to regulatory disclosures that we have taken or are exploring in response to the incident, and in the long term, possible changes (if any) to the regulatory disclosure regime and the suspension policy (Part IV).

## **Part I: Current Regulatory Disclosure Regime and Related Policies**

### *Regulatory disclosures and publication thereof under the SEHK Listing Rules*

5. Under the Hong Kong listed company disclosure regime, issuers are required to submit documents to The Stock Exchange of Hong Kong (“SEHK” a wholly-owned subsidiary of HKEx) for publication on the HKExnews Website electronically. Issuers are also required to maintain their own websites and publish disclosures required under the Listing Rules for free access by investors. In addition and separately as a value-add service, HKEx also disseminates on a subscription basis regulatory disclosures by issuers to information vendors through the Issuer Information Feed System (“IIS”). Further dissemination of such disclosures by the information vendors to their customers and other users is free of charge insofar as HKEx fees are concerned.

6. The current issuer information dissemination model was implemented in June 2007, after a market consultation initiated in April 2000. Under the then model, the primary means of information dissemination for Main Board listed issuers was through newspapers in the form of paid advertisements<sup>1</sup>. Issuers were required under the Listing Rules to publish announcements in at least one Chinese and one English language newspaper.

7. There were a number of issues relating to the old information dissemination model:

- (a) Investors seldom had access to the entire population of issuers’ information which were published in a fragmented and unpredictable manner in a number of different newspapers<sup>2</sup>. The purpose of making issuers’ disclosures readily available to the investing public was not fully served.
- (b) Hong Kong newspapers were not widely distributed outside of Hong Kong. This meant it was difficult for international investors to access issuers’ disclosures.
- (c) Because newspapers were circulated daily, issuers that failed to submit price sensitive announcement to newspapers the previous night for publication the next morning would risk share trading suspension for the whole of the following day.
- (d) Paid advertisements were costly for issuers. Consequently some issuers would minimize costs and publish announcements in newspapers which might have lower circulation.

8. The consultation proposals were well supported and considered to be a more cost effective way of issuers’ news dissemination. Many respondents considered that there should be a central website where all issuers’ announcements could be located; they

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<sup>1</sup> Except for issuers listed on the GEM Board. Since the introduction of the GEM board in 1999, GEM issuers were required only to publish its announcements on the SEHK website and their own websites.

<sup>2</sup> There are over 20 gazette newspapers in Hong Kong.

considered HKEx to be the appropriate body to administer the central website as it would be able to ensure the integrity of information provided.

9. Consequently and with the increased popularity of the internet, the SEHK amended the Listing Rules in May 2001 to require issuers to also provide the SEHK with an electronic copy of announcement. These announcements were manually posted on the HKEx website.

10. In November 2005 HKEx published an exposure paper to propose transitional measures to a purely web-based news dissemination regime. The transitional measures would involve phasing out newspaper publications in stages.

11. The proposals were widely supported. To prepare for the transition, HKEx put substantial effort to upgrade the capacity and enhanced the functionality of issuer information dissemination systems.

12. Implementation of the new issuer information dissemination model commenced in June 2007 and included the following:

- (a) The HKEx Website as the primary means of issuers' information dissemination. In addition, the website also served as a central repository of issuers' historical information (dating back to 1999) to the investing public at no cost;
- (b) A requirement for all issuers to have their own websites by 2008, and to publish shareholders communications on their websites. This served as an alternative site for investors to locate issuers' information; and
- (c) An enhanced electronic submission system with a) automatic and straight-through publication on the HKEx website of all issuers' regulatory documents submitted to the SEHK. This replaced the manual arrangement of publication and allowed more timely information dissemination; and b) longer publication windows, including morning, lunchtime and evening to allow issuers to publish information more timely and reduce instances of trading suspension.

13. At the Legislative Council's Panel on Financial Affairs meeting on 5 July 2007, HKEx briefed the Panel on the new arrangements and cited the benefits:

- (a) The new arrangement was a more efficient means to disseminate issuers' information. Relying on newspapers forced the market to pause until information was published daily.
- (b) With mandatory electronic submission and automated and straight-through publication, the time taken for issuer disclosures to reach the market would be reduced. The longer and more frequent publication windows (including morning, lunchtime and evening) allowed issuers to publish

information on a timelier basis and the instances of trading suspension<sup>3</sup> would be reduced.

- (c) HKEx would not charge investors for access to issuer disclosures on its website. It had no intention to do so in the future.
- (d) There would be substantial cost savings to issuers which in turn would be beneficial to shareholders as a whole.
- (e) The HKEx Website would provide comprehensive access to all issuers' announcements and documents. It would also be a central repository for issuers' announcements and documents. Investors would have access to this repository of documents at all times.

#### *The HKExnews Website as the Centralised Repository for Regulatory Disclosures*

14. Since 2006, the Exchange has grown significantly in size and the volume of issuers disclosures increased substantially. Investors' access to HKExnews Website increased steadily:

- (a) The number of issuers increased 20% from 1,173 in 2006 to 1,413 in 2010. Structured products issues also increased about four fold from 2,906 in 2006 to 14,367 in 2010.
- (b) Issuers regulatory documents (including announcements, notices, shareholders' circulars, financial statements, etc.) increased 114% from 94,666 in 2006 to 202,492 in 2010. In July 2011, the number of issuers' communications for the month was 15,390. During 2011, the maximum release in a day was 1,942 documents on 1 April 2011.
- (c) The number of visits to the Listed Company Information of the HKExnews Website increased 55%, from an average monthly hit rate of 12.6 million in 2007 to 19.6 million in 2010. During 2011, the average monthly hit rate of the HKExnews Website was 35.5 million (i.e. more than 1.2 million hits per calendar day), compared with the average monthly hit rate of 13.7 million in year 2008 (average hit rate of 450,000 a day). The maximum hit on a day was 1.9 million on 29 March 2011.
- (d) Lunchtime releases of price sensitive information and results by issuers are less common. In the first 6 months of 2010, there were 185 (daily average about 1.53) and 153 (daily average about 1.26) results and price sensitive information announcements released respectively. During this period, the maximum release of results announcements during lunch time

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<sup>3</sup> Suspension of trading in a security would be required if an issuer has price sensitive information not announced to the market. Under the new model issuers could publish price sensitive information during the morning, lunch time or evening publication windows and resume trading in the next trading session. In contrast under the old model issuers with price sensitive information must suspend trading until the announcement is published in the newspaper on the following day, upon which it would resume trading on the morning. The investing public would not have access to the issuer's announcement until it is published in the newspapers the following day.

in a day was 13 on 30 March 2010, whilst the maximum release of price sensitive information announcements was 5 on 10 February 2010.

15. The HKExnews Website underwent a major revamp in 2008 to enhance its functions, capacity, resilience and security. Under the current set-up, HKExnews Website operates on a dual set of identical systems connecting to two separate Internet Service Providers, which provide 100 per cent redundancy in case one of the systems fails to function normally. Intrusion Protection System (“IPS”) was introduced as part of the system.

16. Since 2008, the HKExnews Website has undergone a number of functional and capacity enhancements, and regular updates to its IPS. Periodic internal and external reviews were conducted, and review findings identified during various reviews were followed up accordingly.

17. Before the present incident, HKEx websites had experienced a few isolated intrusion attempts previously and our IPS had been effective in fending off such attacks without material impact to the services. Thereafter HKEx had also further improved the detection and filtering mechanisms to strengthen protection against potential malicious attacks.

#### *Contingency Plan*

18. HKEx has recognized that its responsibility to the market would increase under the new dissemination model as it would be the primary provider of regulatory information.

19. HKEx also has in place contingency measures to ensure the continuity of issuers’ information disclosure if the primary system fails to operate. This includes:

- (a) Maintenance of back-up sites for its news website and the electronic submission systems.
- (b) In case of a double point failure, a temporary Bulletin Board would be activated to inform the public of issuers’ disclosure. The Bulletin Board contains a list of recent issuers’ publications and a page containing hyperlinks to all issuers’ websites. Investors then access issuers’ disclosure on their own websites after identifying which company has made disclosures from the Bulletin Board. The Bulletin Board would be manually updated.
- (c) The website address of the Bulletin Board would be kept confidential to discourage attacks. In case of website failure, HKEx would inform the issuers and the public of the service interruption and the location of the Bulletin Board.
- (d) HKEx would aim to maintain trading of securities and minimize suspension as far as possible during the contingency period, subject to the general principles that i) price sensitive information is widely disseminated; and ii) the Bulletin Board arrangement is widely publicized

and that investors understand where to locate issuers' announcements. The plan provided that there would be suspension of issuers that released price sensitive information, for one trading session, until the information about how to access the Bulletin Board and locate issuers information become widely available.

20. This plan was updated and endorsed by the Listing Committee of the SEHK after comments from the executives of the Securities and Futures Commission (the "SFC") earlier this year.

#### *SEHK's Suspension Policy*

21. SEHK has a statutory duty<sup>4</sup> to ensure, as far as reasonably practicable, an orderly, informed and fair market in securities traded on the SEHK. In discharging this duty, SEHK must act in the interest of the investing public. Where the maintenance of an orderly, informed and fair market is, or may be, jeopardised or where protection of investors so requires, SEHK may suspend trading of an issuer's securities, whether or not a request is made by the issuer.

22. Listed issuers are regulated by the Listing Rules. The Listing Rules reflect currently acceptable standards in the market place and are designed to ensure that investors have and can maintain confidence in the market and in particular that:

- (a) potential investors are given sufficient information to enable them to make a properly informed assessment of an issuer; and
- (b) investors and the public are kept fully informed by listed issuers, and in particular that immediate disclosure is made of any information which might reasonably be expected to have a material effect on market activity in, and the price of, listed securities.

23. It is a fundamental principle of the Listing Rules that price sensitive information should be disseminated in such a way that it is equally available to all investors at the same time. Where price sensitive information has been disseminated in such a way that some investors have access to it while others do not, trading in the shares of the issuer concerned should not take place.

#### *Trading Resumption Policy*

24. Under the current suspension policy, trading can resume only if the issuer's price sensitive information has been published on the HKExnews Website and the issuers' own website. HKEx website publication windows are opened during non-trading hours, between 6.00 am to 8.30 am, 12.00 noon to 1.00 pm and 4.15 pm to 11.00 pm on business days, and 6.00 pm to 8.00 pm on a holiday before a business day. Therefore, where trading is suspended in an issuer's securities, it may only resume after its announcement is published after the trading session closes. The shortest suspension period is one trading session (or the remaining trading session if suspension takes place after trading commenced).

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<sup>4</sup> Section 21 of the Securities and Futures Ordinance



25. In May 2009, the Listing Committee considered the desirability of dissemination of issuers' information during trading hours and shortening trading halts. It noted that allowing issuers to release price sensitive information during trading hours accompanied by a short trading halt would leave investors, in particular retail investors, with very little time within which to react to the information released. Further, trading suspension/resumption involved suspension of the equity securities as well as related structured products such as callable bull/bear contracts and derivative warrants. Mid-session resumption would present significant operational challenges under the current Automatic Order Matching and Execution System/Third Generation ("AMS/3 trading system") where suspensions and resumptions are manually processed. A number of overseas exchanges that operated trading halt regimes did not widely operate related exchange-traded derivative warrants markets and did not face the same operational issues. It was decided that the current trading halt arrangement would remain unchanged for the time being.

#### *Overseas Suspension and Information Dissemination Practices*

26. Major overseas markets apply a variety of suspension and news dissemination arrangements. In summary,

- (a) The centralized information dissemination model adopted by HKEx is a common model amongst major jurisdictions, particularly in Asia Pacific.
- (b) All jurisdictions reviewed have centralized archived news and documents maintained by the exchange or local regulators.
- (c) It is common practice to require trading suspension if the issuer is not able to announce price sensitive news. This is a tool to prevent a disorderly and uninformed market.
- (d) A majority of markets allow trading of securities to continue after the issuer releases price sensitive news in the market, either immediately or after a short trading halt. The exceptions are Hong Kong and Shanghai, where price sensitive news may not be released during trading hours and resumption takes place in the next trading session after release of the news.

27. HKEx's practices are generally in line with the markets reviewed (including Australia, Singapore, Shanghai, UK and the US):

#### *News dissemination model*

- (a) Like Hong Kong, Australia, Singapore and Shanghai operate on a centralized information dissemination model. Issuers' announcements are published on the websites of the Australian Securities Exchange ("ASX"), the Singapore Stock Exchange ("SGX")<sup>5</sup> and the Shanghai Stock Exchange ("SSE").

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<sup>5</sup> In Australia, issuers must give material news to ASX's Company Announcement Platform electronically for publication on the ASX's website. ASX also forwards the announcements to the Australian Securities & Investments Commission and subscribers (as such information vendors) for simultaneous onward

- (b) In Shanghai, issuers must also publish their announcements in designated newspapers.
- (c) The UK and the US apply a different news dissemination model which employs the services of outside providers. In the UK, issuers must submit news to a Regulatory Information Service<sup>6</sup> which will distribute news simultaneously to multiple newswires, websites and press. In the US, listed issuers provide their news releases to major presses like Dow Jones & Company, Inc., Reuters Economic Services and Bloomberg Business News.

*News publication during trading hours*

- (a) Many exchanges except Hong Kong and Shanghai allow publication of price sensitive information throughout the day, although some jurisdictions require a short trading halt after the release of information to allow for adequate dissemination of information and to prevent a disorderly market and price volatilities.
- (b) In Australia, trading resumption will take place 10 minutes (or in the case of a takeover announcement, an hour) after ASX receives the price sensitive news from the issuer. In Singapore, the issuer must allow for at least 30 minutes between the dissemination of a price sensitive announcement and trading resumption<sup>7</sup>. The US may request a trading halt for dissemination of information and to give public time to evaluate the information, given the lack of a single dissemination mechanism. There is no trading halt after publication of issuers' news in the UK.
- (c) In Hong Kong, most issuers' news can only be published outside trading hours. Shanghai has a more stringent regime. As said, the issuer must publish material news announcements in newspaper which is once daily. For certain material announcements, trading is suspended for one hour on the morning of publication to allow for the adequate dissemination of the information.

*Suspension practices where price sensitive news are not announced*

- (a) All exchanges require suspension if the issuer is not able to announce price sensitive news<sup>8</sup>.

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dissemination to the market. In Singapore, an issuer must release all announcements via SGXNET (an electronic submission and publication system) for publication on SGX website.

<sup>6</sup> It is market practice for news to be disseminated by RIS before market opens.

<sup>7</sup> In Australia, the publication window is between 8.30 am and 7.30 pm Sydney time on trading days. In Singapore, the operating hours are 6 am each day to 4 am the following day, excluding Sundays and public holidays.

<sup>8</sup> US issuers are obligated to notify the New York Stock Exchange if they have material news subject to release. The exchange may require a trading halt pending the release of the news, the halt may extend for a short period after the news release. The consideration applied is whether the information is material and whether the information is adequately disseminated.

## **Part II: Disruption of HKExnews Website Services and Remedial Measures Taken**

28. At around 11:00am on 10 August 2011, the network monitoring consoles of HKEx and its appointed network vendor reported sudden rise in internet traffic for the HKExnews Website. HKEx IT support teams and the network vendor conducted immediate investigation and identified that “distributed denial of service” (DDOS) attempts had occurred and flooded the internet bandwidth for investor access to regulatory disclosures posted on the HKExnews Website. DDOS attacks refer to organized attack originated from “zombie” PCs under the remote control of a hacker or possibly organized group of hackers. A “zombie” PC is a computer connected to the Internet that has been comprised by a cracker, computer virus or trojan horse and can be used to perform malicious tasks of one sort or another under remote direction. Prima facie, the vast majority of such traffic came from outside of Hong Kong.

29. Following the established IT security incident response procedures, HKEx requested its network providers to block the access for these “zombie” PCs and took measures to increase the resilience of the HKExnews Website. These two quick fix actions helped restoring the website to normal service but only for a short while. The HKExnews Website became unstable again when the hacker initiated more sophisticated DDOS attacks involving a mixture of hacking techniques in spurs of extremely high frequency connection requests within a very short period of time.

30. The incident was determined by heads of IT and Listing Divisions in HKEx as “Major Market Incident” and immediately escalated to the Chief Executive and the Senior Management Committee of the HKEx. The HKEx Board, which was then conducting its other business, was also briefed by the Head of Listing of the incident at around 12:00 noon. At around 12:30pm, the temporary Bulletin Board was activated. At that time its website address was not yet broadcast to the public.

31. At around 13:00, HKEx IT support team attempted to reset the various system components to alleviate the effect of the attacks. Services resumed briefly and went down again under the continuous attacks. HKEx obtained external anti-hacking support both onsite and remotely from overseas in the afternoon of 10 August. After detailed analysis of the attack traffic pattern and subsequent deployment of further anti-intrusion measures by the external anti-hacking experts, the HKExnews Website resumed normal service at around 8:00pm. Although hacking attacks against the HKExnews Website had repeated on the following days (11 and 12 August), the new intrusion protection measures deployed by the HKEx with the assistance of external anti-hacking experts have so far been successful in fending off those attacks. The service of the HKExnews Website had largely been maintained normal.

32. Technology Crime Division of the Hong Kong Police was briefed of the incident. Detailed discussion was conducted with the investigators in the late evening of 10 August and necessary forensic information was collected by the Police to investigate and trace the origin of the attack.

### Part III: Impact on Regulatory Disclosures and Decision on Suspension

#### *Activation of HKEx Contingency for Publication of Issuer Disclosures*

33. As noted above, HKEx has a contingency plan in place in case the HKExnews Website becomes unable to function or inaccessible. This plan was updated and endorsed by the Listing Committee of the SEHK after comments from executives of the SFC earlier this year. It provides for setting up a temporary Bulletin Board, which carries headlines of issuer announcements and a list of links to listed issuers' own websites.

34. Shortly before 12:00 noon on 10 August 2011, staff at the Listing Division of HKEx experienced difficulties accessing the HKExnews Website. They noted that the HKExnews Website was unstable with intermittent failures, liaised with the IT Division and invoked the contingency plan. The SFC<sup>9</sup> was informed.

35. The Listing Division<sup>10</sup> immediately contacted issuers expecting to release price sensitive information, including periodic results announcements, during the lunch publication window that day. It:

- alerted issuers of the instability with the HKExnews Website;
- for results announcements, requested issuers to consider postponing the information release to after-market hours; and
- discussed with issuers the possibility of a half day (i.e. one trading session) suspension from 1:30 pm if their price sensitive information was to be released during the lunch publication window.

36. By around the closing of the lunch publication window at 1:00 pm, the following issuers had, during the lunch publication window, released their periodic results announcement on the HKExnews Website:

<b><u>Stock Code</u></b>	<b><u>Company Name</u></b>
2356	Dah Sing Banking Group Limited
597	China Resources Microelectronics Limited
293	Cathay Pacific Airways Limited
2380 / 4517	China Power International Development Limited
440	Dah Sing Financial Holdings Limited
388	Hong Kong Exchanges and Clearing Limited

Two issuers postponed release of their results following discussion with the Listing Division:

<b><u>Stock Code</u></b>	<b><u>Company Name</u></b>
1111	Chong Hing Bank Limited

<sup>9</sup> The SFC is the listing regulator for Hong Kong Exchanges and Clearing Limited. The SFC is required by the Listing Rules to exercise the relevant powers and function in a like manner to the Listing Division.

<sup>10</sup> The SFC contacted Hong Kong Exchanges and Clearing Limited.

HSBC Holdings plc (Stock Code: 0005) also requested the Listing Division to release an announcement on the sale of its card and retail business in the US.

*Suspension from Trading of Certain Issuers in the Afternoon Trading Session on 10 August 2011*

37. After consulting with the SFC it was decided that companies that issued price sensitive information (including results) during the lunch publication window would be suspended if the public could not view the announcements before they made a trading decision in the afternoon. Because the HKExnews Website had only been intermittently available from shortly before the lunch time publication window, investors, particularly retail investors, would not have had sufficient time to access and digest the price sensitive information released during that time. Accordingly, in accordance with the contingency plan, all relevant shares, warrants and other securities tied to the underlying 7 issuers mentioned above were suspended for one trading session. The half day suspension was to enable the investing public to have the time to understand the alternative arrangement provided by the contingency plan and to locate the issuers' announcements on their own websites. As a reference, the Listing Rules provide for a period of at least half an hour for digestion of price sensitive information.

38. At approximately 1:28pm, the Listing Division initiated suspension of these securities and their related structured products, including seven equity securities, one debt security, 396 derivative warrants and 15 CBBCs. Because the suspension process was manual and because of the number of securities involved, some of the securities were suspended shortly (up to 23 seconds) after 1:30pm (the debt security was suspended at 1:31pm). 294 trades representing 4.9 million shares and turnover of approximately \$39 million (0.05% of the day's turnover of \$83 billion) were matched before all suspensions were effected. Stock options and futures contracts traded on the HKEx derivatives market on HSBC, HKEx and Cathay Pacific were also suspended.

39. At around 1:40pm, HKEx issued a news release "Disruption of HKExnews Website Services" on its corporate website ([www.hkex.com.hk](http://www.hkex.com.hk)). The news release directed investors to the temporary Bulletin Board. The public could view the announcements on the listed companies' websites after identifying the announcements on the Bulletin Board, as alternative to viewing on the HKExnews Website. The news release was made in the major newspapers published in Hong Kong on 11 August 2011 in substantially the same form, in accordance with the contingency plan.

40. As noted above, the HKExnews Website was stable since approximately 8:00 pm 10 August 2011. At around 8:56 am on 11 August 2011, HKEx issued a further news release "Resumption of HKExnews Website Services". It advised the public that the HKExnews Website had resumed normal service, and the Bulletin Board would continue to remain in operation during the day. Trading in the securities related to the seven issuers resumed on 11 August 2011.

41. Under the current regulatory disclosure regime and the suspension policy as detailed in Part I, HKEx believes the decision to suspend the trading of equity securities of the seven affected issuers and their related structured products is in the best interests

of the market, in particular the retail investors and the best way to ensure and maintain an orderly, informed and fair market in the securities traded on the SEHK as required of it under the Securities and Futures Ordinance.

#### *Market Communication*

42. Press releases in relation to the incident are attached. The news release of 11 August 2011 outlines the steps put in place to reduce the impact of future incidents. A news conference was held by the Chief Executive of HKEx at 5:45pm on 11 August to provide further information to the public on the incident and the short term mitigation measures.

10 August

Disruption of HKExnews Website Services

<http://www.hkex.com.hk/eng/newsconsul/hkexnews/2011/1108104news.htm>

Suspension of Trading

<http://www.hkex.com.hk/eng/newsconsul/hkexnews/2011/1108105news.htm>

11 August

Resumption of HKExnews Website Services

<http://www.hkex.com.hk/eng/newsconsul/hkexnews/2011/110811news.htm>

Further Information about the Organised Attack on the HKExnews Website and Mitigation Measures

<http://www.hkex.com.hk/eng/newsconsul/hkexnews/2011/1108112news.htm>

#### **Part IV: Interim and Long Term Measures**

##### *Interim Measures: The HKExnews Website*

43. In the light of the malicious hacking attacks that took place on 10 August and the few following days thereafter, HKEx has taken the following steps to enhance the resilience of the HKExnews Website –

- (a) installation of new IPS with customized filtering mechanism to fend off hacking attack traffic;
- (b) Onsite presence of IT support staff and IPS support engineer for immediate response to new attacks; and
- (c) HKEx will continue to work with its network and security vendors to monitor the stability of HKExnews Website. Additional pre-cautionary measures have also been taken or are being deployed to increase the vigilance of the HKExnews Website.

44. As of the date of this report, HKEx has continued to receive varying intrusion attempts. Its new intrusion protection measures so far have been successful in fending off these attempts.

### *Interim Measures: Publication of Regulatory Disclosures*

45. HKEx has adopted a series of measures to ensure the market functions normally and investors continue to have timely access to announcements by issuers. In view of the risk of possible further organised attacks on a central depository of company disclosures, HKEx will seek to introduce alternative venues for investors to access company announcements. These measures, as stated in the news release issued on 11 August 2011, include:

#### Bulletin Board Service

The Bulletin Board service ([www.bulletinboard.hk](http://www.bulletinboard.hk)) will remain in operation. The Bulletin Board contains a list of all documents published by issuers and refers users to the issuers' websites to view these documents. The website address of the issuers can be found on the Bulletin Board.

#### Paid Advertisements

Starting from Friday, 12 August, HKEx has been publishing paid advertisements in several local newspapers<sup>11</sup> with a list of companies which plan to release results announcements. Under this arrangement, and where the listed company has published its results announcement on its website as per Listing Rules requirements, the investing public will have free, equal and timely access to results announcements regardless of whether investors can access such announcement on the HKExnews Website and the company will not be suspended even if the HKExnews Website was to become unstable or out of service again. This measure will be in place tentatively until 2 September 2011, subject to further review.

46. The above interim measures aim to ensure that investors have reasonable access to information regarding scheduled price sensitive arrangements (such as results) that issuers expect to release on any particular day independent and separate from the HKExnews Website and the Bulletin Board, thereby ensuring that suspension can be avoided for such scheduled price sensitive arrangements even if the services of both the HKExnews Website and the Bulletin Board were to become unavailable.

47. HKEx is also exploring, as possible near term interim measures, to send snapshots of the notices of announcements published on the Bulletin Board by email to all Exchange Participants, Clearing Participants, Information Vendors and the media for their publication and further dissemination to their clients and the public. HKEx is also considering posting such snapshots through agreements with selected portals and other media websites. Separately, HKEx is also exploring the possibility of selected mass portals publishing all issuer disclosures in parallel with the HKExnews Website for public information. Announcement to the market will be made once decisions were made.

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<sup>11</sup> Apply Daily, HK Economic Times, HK Economic Journal, Ming Pao, Oriental Daily News, SCMP, Sing Tao Daily, The Standard.

48. If it should prove possible to implement the measures mentioned in paragraph 47 above in such a way that information is freely and equally accessible to the investing public and all investors are on an equal footing in knowing where to access it, then suspension of trading could be avoided also for unscheduled price sensitive information that is published during a publication window, even if the HKEx Website and the Bulletin Board are inaccessible. Until such measures (or any other measures having the same effect) are implemented, listed issuers planning to release price sensitive information (other than results) during the lunch publication window have been made aware that under the current suspension policy, there is a risk of suspension in the afternoon if the news dissemination systems are disrupted. As noted in paragraph 14(d) above, there were very few price sensitive announcements and results made during the lunchtime publication window historically.

#### *Long Term Measures*

49. At the time the current information dissemination model was implemented there was no alternative institution which would naturally be ready, willing and able to provide a central repository website whose sole purpose is to provide a public service, and for free. Since then, information dissemination over the internet has changed rapidly.

50. Over the long-term, the SEHK, in consultation with the Listing Committee and the SFC, will explore the feasibility and merits of an alternative regulatory disclosure regime including an enhanced distribution model whereby the transparency of the market relating to issuers' disclosures will be expanded beyond the HKExnews Website, as well as changes, if any, to the current suspension policy. Any change to these policies as well as the necessary supporting measures in the long term would require careful and comprehensive consideration and consultation with the Listing Committee, the SFC and the wider market, taking into account any improvements in wider dissemination of information that may be able to be achieved.

51. The SEHK will also, in the long term, consult the market to explore the feasibility of a trading halt policy.

52. Any changes to the information dissemination model should observe the following principles:

- (a) Information must be distributed free of charge to the investing public;
- (b) In addition to the timely distribution of issuers' announcement, there should be a repository of issuers' disclosures;
- (c) The information must be equally accessible; and
- (d) The integrity of issuers' information must be maintained.

53. In addition, HKEx believes investor education should also be improved so that they would be better aware of the ways in which they could keep themselves informed



of regulatory disclosures made by the issuers and would be in a position to make informed investment decisions.

Hong Kong Exchanges and Clearing Limited  
August 2011

## HKEx News Release

Shai

Updated: 10/08/2011

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### Disruption of HKExnews Website Services

Hong Kong Exchanges and Clearing Limited (HKEx) announced today (Wednesday) that HKExnews website services are being interrupted due to technical problems. Contingency measures have been invoked until further notice to provide for the continued dissemination of issuers' regulatory news.

HKEx's other systems are not affected and trading in its securities and derivatives markets continues to operate normally.

HKEx is now investigating the problem and the HKExnews website services will resume as soon as the technical problem is resolved.

*Where can investors find issuers' information?*

As a result of the website service disruption, issuer documents submitted to HKEx for publication on the HKExnews website ([www.hkexnews.hk](http://www.hkexnews.hk)) and the Growth Enterprise Market website ([www.hkgem.com](http://www.hkgem.com)) may not be published on the HKExnews website.

In addition, investors can refer to the temporary Bulletin Board ([www.bulletinboard.hk](http://www.bulletinboard.hk)) that lists all documents published by issuers following the website service disruption and refer to the issuers' websites to view these documents. Issuers' website address can be found on the Bulletin Board.

*Will trading of securities of individual issuers be suspended?*

HKEx has adopted a half day (i.e. one trading session) suspension policy for issuers which announce price sensitive information during the lunch publication window today. This trading suspension policy aims to give all investors sufficient time to understand the contingency arrangements and locate issuers' announcements on their websites.

Trading in an issuer's shares will also be suspended if price sensitive information announcements are not timely posted on an issuer's website and/or the headlines and document titles are not timely posted on the Bulletin Board.

Notifications on suspension and resumptions will be published on the Bulletin Board. AMS\* Exchange News information pages will contain details of the suspension announcements. The suspension / resumption announcement is also posted on individual issuer's websites.

*\*The Automatic Order Matching and Execution System for HKEx's securities market*

#### *Additional Information*

Exchange participants and information vendors are reminded to inform their individual clients about the abovementioned service disruption and contingency measures.

Ends

## HKEx News Release

Shai

Updated: 10/08/2011

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### **Suspension of Trading**

Due to technical problems encountered at the HKExnews website ([www.hkexnews.hk](http://www.hkexnews.hk)), the interim results announcement of Hong Kong Exchanges and Clearing Limited ("HKEx" or "the Company") and its subsidiaries for the six months ended 30 June 2011 submitted by the Company at 12:44 pm today for publication on the HKExnews website may not have been publicly accessible. HKEx Board of Directors announces that trading in the shares of HKEx on The Stock Exchange of Hong Kong Limited has been suspended with effect from 1:30 pm on Wednesday 10 August 2011.

Ends

## HKEx News Release

Sha

Updated: 11/08/2011

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### **Resumption of HKExnews website services**

Hong Kong Exchanges and Clearing Limited (HKEx) announced today (11 August 2011) that HKExnews website services have resumed operations after a temporary interruption was experienced on 10 August 2011.

During the interruption, HKEx activated the Bulletin Board ([www.bulletinboard.hk](http://www.bulletinboard.hk)) for issuers' information disclosure. The bulletin board will continue operation in parallel with the HKExnews website today.

HKEx's other systems were not affected during the incident and trading in its securities and derivatives markets continued to operate normally. HKEx has referred the incident to the Police and the Securities and Futures Commission. It is investigating the cause of the problem.

## HKEx News Release

Shai

Updated: 11/08/2011

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### **Further Information about the Organised Attack on the HKExnews Website and Mitigation Measures**

Hong Kong Exchanges and Clearing Limited (HKEx) would like to provide further information on the disruption of service to the HKExnews website yesterday (10 August 2011).

Since the interruption, HKEx's Information Technology team has been working closely with local and overseas security experts to investigate the cause of the attack and restore normal service. In the course of the investigation it was determined that a mixture of attacking techniques had been deployed to intentionally interrupt the operation of the HKExnews website. The malicious traffic originated from a network of personal computers, the majority of which were based outside Hong Kong.

Experts from the technology vendor supplying HKEx's intrusion protection technology successfully implemented a filter mechanism to fend off further attacks last night. Today, HKEx is still observing malicious traffic attempting to access the HKExnews website and is continually adjusting and strengthening the filter mechanism.

Engineers are on site today at HKEx's data centres to provide necessary support for the stable operation of the HKExnews website. HKEx is also in close cooperation with the Technology Crime Division of the Hong Kong police.

In the interim, HKEx has adopted a series of measures to ensure the market functions normally and investors continue to have timely access to announcements by issuers. In view of the risk of possible further organised attacks on a central depository of company disclosures, HKEx will seek to implement a more decentralised model for investors' access to company announcements. These measures are:

#### **Bulletin Board Service**

The Bulletin Board service ([www.bulletinboard.hk](http://www.bulletinboard.hk)) will remain in operation. The Bulletin Board contains a list of all documents published by issuers and refers users to the issuers' websites to view these documents. The website address of the issuers can be found on the Bulletin Board.

#### **Paid Advertisements**

In addition, starting from tomorrow (Friday, 12 August), HKEx will publish paid advertisements in selected local newspapers with a list of companies which plan to release results announcements. It is important to note that under this arrangement, and where the listed company has published its results announcement on its website as per Listing Rules requirements, the investing public will have free, equal and timely access to results announcements under the Listing Rules regardless of whether investors can access such announcement on the HKExnews website and the company will not be suspended. This measure will be in place until a further review.

#### **Email and Third-party Portals**

HKEx will also send snapshots of the notices of announcements published on the Bulletin Board by email to all Exchange Participants, Clearing Participants, Information Vendors and the media for their publication and further

dissemination to clients and the public. HKEx will also post snapshots of this information through agreements with selected portals and other media websites. An announcement will be made shortly once this service commences.

We are also exploring the possibility of selected mass portals publishing all issuer disclosures in parallel with the HKExnews website for public information.

Over the long-term, The Stock Exchange of Hong Kong, in consultation with the Listing Committee and the Securities and Futures Commission (SFC), will explore the feasibility of an enhanced distribution model whereby the transparency of the market relating to issuers' disclosure will be expanded beyond the HKExnews website.

HKEx takes this incident very seriously and will continue reviewing its procedures, together with the Listing Committee and the SFC, to ensure that investors are protected and the market operates with full transparency.

Ends