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**Re: June 2017 New Board Concept Paper<sup>2</sup>**

Dear HKEX,

**Part I: Navigating a Sea of Change**

Venice in the early 16th century faced an existential threat to its continued commercial success. A business-savvy city-state, like modern Hong Kong, Venice pioneered many financial innovations<sup>3</sup> used throughout the world today. By the early 1500s, Venice began to slide into economic and social decline because it was unable to act as the bridge between Western Europe and the Middle East. Advances in sailing, navigation and ship-building technologies adopted by its competitors opened up new trade routes from Europe to the Middle East, India and Asia, bypassing Venice entirely. While its competitors sailed the vastness of the world’s oceans, Venice shut itself within confines of the Mediterranean Sea with an increasingly hostile Ottoman Empire which eventually reduced the once flourishing city-state as its vassal. Unable

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<sup>1</sup> Since 2004 advisor to TSMC Ltd., the world’s largest semiconductor maker listed on the New York Stock Exchange, with US\$180+ Billion market capitalisation (as of August 17, 2017), and Director of Emerging Technologies & Special Projects at International IP Commercialization Council (see [www.IIPCC.org](http://www.IIPCC.org)) a non-governmental organisation working with the United Nation’s World Intellectual Property Organization, APEC and PBEC to establish global IP best practices and standards. This comment letter has been submitted in my individual capacity and may not reflect the views and opinions of the above entities.

<sup>2</sup> <http://www.hkex.com.hk/eng/newsconsul/mktconsul/Documents/cp2017061.pdf>

<sup>3</sup> “By the early fourteenth century, financial innovations included: the appearance of limited liability joint stock companies; markets for debt (especially bills of exchange); secondary markets for a wide variety of debt, equity and mortgage instruments; bankruptcy laws that distinguished illiquidity from insolvency; double-entry accounting methods; business education (including the use of algebra for currency conversions); deposit banking; and a reliable medium of exchange (the Venetian ducat).” <http://www.businessinsider.com/the-economic-history-of-venice-2012-8>

to harness emerging technologies to fend off challenges to its control of trade routes to the East, Venice's future was eclipsed.

Today in the 21st century, Hong Kong is facing a sea of dramatic social, economic and political changes brought about by emerging technologies such as the Internet of Things, machine learning, AI, quantum computing, V/R, 4D printing, 5G wireless, real-time stream processing & analytics, blockchain, wearable IT, and the new digital collaborative economy. This comment letter respectfully submits its forward-looking recommendations on the June 2017 New Board Concept Paper ("Concept Paper") to help clear the listing waves for innovative entrepreneurs sailing to Hong Kong.

### **A. Executive Summary**

Like all things in life, there needs to be a constant, a North Star that provides general direction for any human endeavour. HKEX should consider re-defining the overall goal before attempting to reform the current listing regime. Without a clear direction, any reform measure will struggle to be effective. This Letter recommends that HKEX adopt the goal of attracting world-class tech issuers through the creation of a new third board for emerging technologies companies ("e-Tech Board"). This new board should be integrated with the Main Board and GEM to create a seamless conduit for a tech startup to grow from small (e-Tech Board eligible), medium (GEM-eligible) to large cap company (Main Board eligible). In short, the new third board will be an exclusive starting point for technology companies founded and operating globally whether in Tel Aviv, Silicon Valley, Berlin or Shenzhen. From there, it can advance onto GEM or the Main Board. Part II of this Letter will discuss: (i) the importance of setting a clear vision and direction for the current impetus for reform in order to better set the framework of dialogue and organise future reform efforts; and (ii) the need to create the e-Tech Board as a way to mark a clear distinction between the current Main Board and GEM and set a path for all three boards to form an integrated network of exchanges that can service the needs of issuers in both the technologies and traditional sectors.

Part III of this Letter discusses the adoption of technology-related tools and new technology-driven listing criteria to attract technology issuers such as the mandatory appointment of a chief intellectual property officer to sit on the board of directors (to mirror the success of NASDAQ in using technology to attract technology). Part IV explores implementing further tech-friendly reforms such as direct listing (currently being proposed by the New York Stock Exchange). Part V examines the need to create not only a third new board, but an ecosystem of venture capitalists, investors, industry experts, developers, engineers and scientists in order to foster the sustainable growth of Hong Kong as a financial & technological hub of the world and attract world-class tech issuers to list on HKEX in accordance with conservative corporate governance principles, robust shareholders' protection and sound risk management. Part VI specifically explores the question of permitting mature large cap issuers with multi-class or weighted voting rights ("WVR"). Part VII ends with concluding thoughts and actions recommended.

### **Part II: Setting Overall Direction for Reform**

Without a clear goal, no reform efforts can succeed. Much has been written in the Concept Paper about details to "broaden capital markets access in Hong Kong by opening up to

a more diverse range of issuers<sup>4</sup>.” Yet without a specific over-arching direction, details will be stuck in the morass of unclear action plans and diffused messages to the public and markets.

### **A) Technology-Based Objective Oriented Standard**

The various structural challenges facing HKEX examined in section 2.3<sup>5</sup> of the Concept Paper may be fairly summed up to have been caused by the general market shift towards technology which explains why technology companies have been choosing NASDAQ and the NYSE for their primary listing given their technology-driven ecosystem. No one can doubt the importance of technology<sup>6</sup> in creating wealth and jobs as well as its ever growing influence in all aspects of life within any society. The World Economic Forum reported in 2017 that “[t]en years ago, banks and energy companies dominated the top ten [companies by market cap]. Today, it’s technology companies, with US computer company Apple in the number one spot.”<sup>7</sup>

If the challenges have their roots in the growing importance of technology, then naturally the solution to tackle these challenges must be based on technology. If technology is the problem for HKEX, then technology must be its solution. In proverbial terms, fire must be fought with fire. Therefore in order to “increase the diversity of [Hong Kong’s] offering to investors and [its] attractiveness to issuers<sup>8</sup>”, HKEX ought to make attracting world-class technology issuers as the over-arching goal of its current reform. Such goal may then inform the direction of future policy dialogue amongst industry, public investors and regulators and provide clarity of Hong Kong’s purpose to the global markets. Specific details of reform may then orient themselves towards the goal of attracting world-class tech issuers to HKEX.

### **B) Integrating new e-Tech Board**

The reform to attract world-class tech issuers needs to take place within the context of maintaining market stability and shareholders’ protection in both the current Main Board and GEM. Therefore the creation of a new third tech-oriented board must be scrutinised for its effect on the current workings of both the Main Board and GEM for fear of disrupting the overall integrity and stability of the general HK financial markets.

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<sup>4</sup> June 2017 New Board Concept Paper, p.6.

<sup>5</sup> *Ibid.* at p.14.

<sup>6</sup> The Concept Paper differentiates between a “new economy company” and an “old economy company” as one of its points of analysis. However, this creates a false dichotomy because an “old economy company” may transform itself into a “new economy company” through internal restructuring, mergers & technology related acquisitions and/or spin-offs. Over time, a new company may become an old economy one having been outdated by supervening technologies. The emphasis should instead be placed on recognising the importance of the underlying technology whether practised by a new or old economy company. For example, if an old economy company restructures its line of business to focus on technology, then it should be allowed to list on the new third board proposed in the Letter. See Concept Paper at p.23.

<sup>7</sup> <https://www.weforum.org/agenda/2017/01/worlds-biggest-corporate-giants/> (January 16, 2017)

<sup>8</sup> Concept Paper at p.23.

This section will examine the need to create a third board, its focus on emerging technologies and integrating it within the Main Board and GEM exchanges.

Given the goal to attract tech issuers as established in Part A above, the question becomes doing so using the current Main Board and GEM only or creating additional board(s). Because many tech companies rely heavily on initial research and development to create their long-term value, most would not be able to meet current listing requirements without special accommodations. It would be confusing for market stakeholders if such special accommodations were to be made in the existing boards because it would expressly contradict current listing rules of GEM and the Main Board (for which the HKEX is also seeking public comments). For many of these small cap tech firms, the more appropriate entry point within HKEX would be in a new third board of emerging technologies issuers (“e-Tech Board”). This is consistent with the practice of NASDAQ which has three different market cap tiers (large, medium and small caps).

The e-Tech Board is similar to the “New Board Pro”<sup>9</sup> proposed by HKEX but is substantively different in light of the recommendations discussed here and in Part III. Limiting e-Tech Board to emerging technologies companies prevents issuers currently listed on the Main Board and GEM to take advantage of the proposed reforms in the Concept Paper (such as exemption from quantitative listing requirements) which would help ensure the continued relevance of existing exchanges.

Given the shifting nature of technology, defining which issuers are engaged in the emerging technologies business seems difficult. Such a determination however would be made as part of an issuer’s application to list on e-Tech Board. Once an application has been received, the e-Tech Board’s Listing Committee and sponsoring advisors would engage in a substantive review of whether the prospective issuer’s revenues would be substantively generated from commercialising intellectual property rights owned or licensed from third party entities. Relevant factors would be whether its business plan describes any current research & development and prospective business activities in any scientific, medical, engineering, or technological fields.

Please see Exhibit 1 for a list of emerging technologies areas<sup>10</sup> relevant for the next twenty to thirty years which can be used as a guide in determining the eligibility of the prospective issuer to list on e-Tech Board. Such list would need to be updated in consultation with industry, academia and public investors in light of current technological developments.

Creating one new board (as opposed to two) also makes it easier to allow a small cap tech issuer to advance into medium and large cap tiers over time by becoming eligible to list on GEM (for the former) and the Main Board (for the latter). This approach maintains the continued relevance of existing exchanges because it integrates them into Hong Kong’s over-arching goal of attracting world-class tech issuers. No one exchange can do so. It will require three exchanges to cater to the shifting needs of tech issuers and investors demands. Creating a single emerging technologies board or e-Tech Board allows the HKEX to test the adoption and

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<sup>9</sup> *Ibid.* at p.26.

<sup>10</sup> [http://www.zdnet.com/article/the-enterprise-technologies-to-watc...mall\\_thumb&ftag=TRE5575fdc&bhid=27692990326637821850833644760050](http://www.zdnet.com/article/the-enterprise-technologies-to-watc...mall_thumb&ftag=TRE5575fdc&bhid=27692990326637821850833644760050)

implementation of technology-related tools and new technology-driven listing criteria before rolling them out to general issuers.

### **Part III: Adopting Tech to Attract Tech**

From its formation, NASDAQ aggressively used prevailing technology in financial trading. It was the world's first electronic stock exchange and it was the first exchange to start online trading in the U.S. Its dedication to technology in turn attracted technology issuers which in turn attracted technology-focused investors which in turn created an ecosystem of technology enthusiasts and stakeholders over time. HKEX likewise can attempt to replicate such model through the adoption of (i) technology-related tools and (ii) technology-driven listing criteria.

#### **A) Technology-related tools**

Goldman Sachs reported that blockchain technology can help capital markets globally save US\$6 billion by reducing duplicative affirmation and reconciliation of trades<sup>11</sup>. As part of an experimental effort conducted in the UK capital market, a startup<sup>12</sup> received permission to perform securities issuance, execution and administration via blockchain. The goal in using public blockchain technology in user management, deal execution and post-trade services is to compress the complicated vertical IPO and fund raising processes (areas traditionally festooned with legacy service providers and other fee-heavy intermediaries). Issuers would be more incentivised to list on an exchange that promotes the use of blockchain technology that helps them reduce transactions and infrastructures costs.

HKEX can start to examine the use of blockchain technology in two areas. For publicly traded shares, blockchain technology may be used to streamline securities issuance, execution and administration. For privately traded shares, HKEX may consider the innovative steps taken by a subsidiary of the London Stock Exchange Group to digitise both securities ownership and the capital structure of private companies. The goal of using blockchain technology is to simplify the issuance of shares, so as to provide private companies better access to capital and help them better transition into public companies by earning the trust of future investors<sup>13</sup>.

HKEX may consider going one step further by working with relevant rule making bodies on changing relevant laws to permit Hong Kong registered companies to register issuances and transfers of shares in blockchain form. For example, effective August 1, 2017 Delaware corporate law allows companies incorporated in Delaware<sup>14</sup> (which is home to most Fortune 500 companies) to utilise electronic databases and blockchain technology to maintain and distribute certain corporate records including its stock ledgers. For public companies, such an innovation promotes accurate beneficial ownership records in real-time, allows direct ownership of

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<sup>11</sup> Goldman Sachs, *Profiles in Innovation: Blockchain*, (May 24, 2016) p.44.

<sup>12</sup> <https://www.coindesk.com/bitcoin-for-post-trade-nivaura-wants-to-pair-banks-and-public-blockchains/>

<sup>13</sup> <http://www.coindesk.com/london-stock-exchange-group-using-blockchain-record-unlisted-securities/>

<sup>14</sup> <https://legis.delaware.gov/json/BillDetail/GenerateHtmlDocument?legislationId=25730&legislationTypeId=1&docTypeId=2&legislationName=SB69>

securities because owner of record is equivalent to beneficial owner and facilitates direct communication between an issuer and investors which is critical for effective corporate governance. Taking this step would pave the way for HKEX to consider permitting the issuance and transfer of publicly traded share certificates in blockchain form. Such a step would surely place HKEX among the world's innovative exchanges. As seen in the growth story of NASDAQ, adopting innovative trading practices attracts innovative issuers.

## **B) Technology-driven Qualitative Listing Requirements**

Any reform of listing criteria necessitates a careful balance of shareholder protection and sound corporate governance practices against issuer diversification and ease of listing. Fix the listing criteria too low, shareholder value suffers. Setting the listing criteria too high, issuer diversity suffers. Currently, the focus is on exempting small cap issuers from or adjusting downward the minimum capitalisation, cash flow, revenue, profitability, and float requirements ("Quantitative Requirements") otherwise applicable. However in doing so, there is the concern that public investors may be exposed to risky issuers. If this concern is left unaddressed, the ensuing market for such small cap issuers would be extremely illiquid as investors turn to more stable investments. Simply adjusting Quantitative Requirements is not the most optimal manner to address the balance between shareholder protection and issuer diversity because Quantitative Requirements are by nature arbitrary and its effect on shareholder protection is hard to measure. For example, how much more will shareholder protection be advanced if the minimum market capitalisation for GEM issuers is increased from HK\$100 million to HK\$150 million<sup>15</sup> (as currently proposed in the GEM Concept Paper)?

Further the interests of shareholders and issuers are not aligned when Quantitative Requirements are imposed. In fact, there seems to be an inverse relationship between shareholders' interest and issuers' interest if Quantitative Requirements are used to determine listing eligibility. For example, small cap issuers prefer being exempt from minimum capitalisation requirements to the concern of public shareholders. This inverse relationship reflects the inherent tension between balancing shareholders and issuers' interests in any listing reform initiatives.

To help resolve the tension between protecting shareholders' interests and issuer diversity, we need to examine introducing listing requirements that help align shareholders and issuers' interests. One innovative step in this regard would be introducing listing requirements that are designed to help tech issuers protect their intellectual property ("IP") rights and ensure their continued validity. It is in the interest of both issuer and its investors to ensure that its IP rights are managed effectively. Otherwise, the issuer would lose its capital and its investors would lose their investment.

For example, the centre of any competitive IP portfolio involves trade secrets, which encompass vital manufacturing processes, industrial or commercial information. Contrary to patents, trade secrets are protected without registration, that is, trade secrets are protected without any procedural formalities. Consequently, a trade secret can generally be protected for an unlimited period of time so long as the rightful owner of the information takes reasonable steps to keep it secret (e.g., through confidentiality agreements and proper employees' training). Because trade secrets (unlike patents) can be protected for an unlimited period of time, they are

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<sup>15</sup> Concept Paper at p.8.

very valuable to an issuer's investors and are often capitalised as an intangible asset on the balance sheet. Hence management is under a fiduciary duty to safeguard such assets and must ensure that at all times, even during the litigation process, they are kept secret (often with use of protective court orders) from the adversary as well as parties unrelated to the litigation or risk losing the legal protection accorded to them. If that happens, the issuer would lose a vital competitive commercial advantage to the detriment of its investors.

Therefore, IP rights (and not solely quantitative listing requirements) are more determinative of the financial success of any technology issuer and the expected rate of return of its investors. As such, HKEX should consider adding five new technology-driven qualitative requirements (explained below) to better align the interests of shareholders and issuers to resolve the inherent tension of balancing corporate governance principles against issuer diversity. If HKEX were to implement these controls, then it would probably be the first exchange in the world to roll-out mandatory "IP protection by design" listing rules to incentivise issuers to incorporate technology and intellectual property protections by design within its corporate governance protocols.

Initially these tech-driven quantitative requirements would be introduced solely to the e-Tech Board for emerging technologies companies and then gradually rolled out to GEM and the Main Board so as to form an integrated network of tech-focused exchanges.

The following qualitative listing requirements serve as safeguards against abuse or waste. Therefore, both retail and professional investors should be permitted to invest in e-Tech Board. HKEX has expressed its concern about opening New Board Pro to retail investors given its elimination of Main Board and GEM Quantitative Requirements. But imposing technology-driven Qualitative Requirements serve to provide safeguards where none would otherwise exist. In this way, e-Tech Board differs from the New Board Pro proposed in the Concept Paper.

### **1) Technology & IP Due Diligence Listing Requirement**

It is near impossible to ask the prospective issuer to guarantee that its patent rights do not infringe on any third party rights because questions of infringement are almost always resolved through litigation and settlement. Instead, this requirement mandates the prospective issuer to show to the satisfaction of HKEX that it has complied with all applicable procedural requirements and best practices relevant to the development, invention and commercialisation of its technologies and intellectual property rights (collectively, "Tech-IPs"). The disclosure provided would be publicly available to allow investors to gauge the scope, nature and perceived quality of the applicant's Tech-IPs.

Specifically, the prospective issuer to the e-Tech Board must make binding representations and warranties as to the following non-exhaustive items:

- list of its issued patents, provisional patents, trademarks, service marks and copyrighted materials with issuing authority;
- whether its issued patents have been substantively reviewed for patentability by the relevant patent office by examining all relevant prior arts, subject matter eligibility, novelty and obviousness;
- whether the export of relevant technologies, data and software complies with applicable export control laws and cross border data privacy laws;

- whether it has duly paid all of its IP maintenance fees (such as annual patent fees) and complied with any upkeep requirements to keep its IP rights valid;
- whether any of its IP rights are or will likely be the subject of any controversy or litigation;
- whether it has protected its IP rights by using confidentiality and invention assignment agreements with current and former employees, founders, owners, consultants and relevant third parties) and whether there are any material exceptions therefrom (such as co-ownership rights retained by such persons);
- whether the applicant possesses and develops any trade secrets (if so, the applicant should list the steps it has taken to preserve their secrecy);
- whether the applicant has received any notice designating its patents as standard-essential and therefore requiring it to license them on a fair and reasonable basis;
- whether the applicant has received any notice requesting it to license standard essential patents;
- a description of the technologies which the applicant owns or has the right to use and their importance to its revenue-generating ability;
- the significance of its Tech-IPs on its bottom line going forward;
- a description of the applicant's licensing transactions;
- whether the applicant has granted any indemnities to third parties with respect to its Tech-IPs; and
- any liens or encumbrances on its Tech-IPs.

## **2) Trade Secret Registration Listing Requirement**

One of the most difficult issues for IP owners is providing evidence of its authorship over its trade secrets. By nature, trade secrets must be kept reasonably secret so any publicly disclosed information about its authorship, invention and contents may risk stripping the IP of its trade secret protection. Unlike patents where a central authority issues a publicly accessible document showing authorship and claims, no central authority issues any documentation proving the authorship of trade secrets.

Recently there have been a number of private and public service providers that offer digital fingerprinting systems that would time-stamp a document containing the trade secret with a hash code to help prove its authorship. For example, a NGO that works with the United Nations' World Intellectual Property Organization (WIPO) has been rolling out a digital fingerprinting system to help inventors register their trade secrets. See link at <https://ikr.iipcc.org>. Applicants should be cautioned to select trade secret registration registrars who are not subject to any conflict of interests or perceived to be biased.

The HKEX should require applicants with trade secrets to register them with a reputable digital registrar, especially one using appropriate cybersecurity controls to ensure that the registration system is being patched and monitored for vulnerabilities on a real-time basis. Such a registration requirement helps protect the value of the applicant's trade secrets (and therefore shareholders' value) in case they become the subject of a controversy.

The applicant should be allowed to provide bona fide reasons as to why it should be exempt from such a requirement if it can demonstrate that no registrars operating under current market conditions are able to implement effective cybersecurity controls on its registration system to ensure that its trade secrets would not be disclosed publicly while they are being registered digitally. If an exemption has been so granted, then the applicant must disclose this



fact and undertake that it shall review the market on a quarterly basis for registrars that meet its technical requirements.

### **3) IP Friendly Work Place Certification Listing Requirement**

Many startups work in very open office environments in which persons not bound by any terms and conditions on confidentiality can overhear, see or have physical access to the Tech-IPs of the unsuspecting startup. If this happens, both corporate and shareholders' values are lost.

As part of its tech-objective oriented standard, the HKEX should require that applicants to e-Tech Board have all of their work place areas (such as research & development centers, manufacturing sites and employee cubicle spaces) certified as being Tech-IP friendly, with a further requirement that such certification be renewed at least annually.

The certifying body can be a professional services entity (like an international law firm, auditor, or accounting body) or a non-governmental organisation who will examine the following non-exhaustive items:

- whether the glass walls of the applicant's offices or meeting rooms are enabled to be "fogged-up" at the command of the user to keep prying eyes out;
- whether tight printers and office keys access controls exist;
- whether their internet access router, office LAN, critical infrastructure systems (like its manufacturing sites) are duly secured by appropriate cybersecurity control systems;
- whether its employees present in its commons or pantry areas are able to be over-heard chatting by outsiders;
- whether its employees use open WIFI networks maintained by an outsider; and
- whether outsiders have physical access to employees' laptops, storage devices or physical copies of key work products.

### **4) Chief IP Officer Certification Listing Requirement**

Many issuers have a chief financial officer, a chief information security officer or a chief legal & compliance officer. Not many issuers have a chief IP officer who would be responsible for managing, maintaining, training and monetising the issuer's Tech-IP affairs along with relevant stakeholders. We are already living in an age of tech-driven businesses. It would be irresponsible from a corporate governance perspective not to have an internal chief officer fluent in today and tomorrow's technological and IP trends.

This new listing requirement has two parts. First, all issuers on e-Tech Board must appoint a Chief IP Officer to sit on its board of directors and/or its committee(s) as an executive member to lead discussion of any significant Tech-IP matters, business plans, opportunities and risks. If the Chief IP Officer is fired by the issuer or resigns, the issuer must publicly disclose such fact and the reasons therefor to the markets (much like the disclosure which takes place when an independent auditor is fired or resigns) to allow public investors a chance to gauge the

significance of such change. Second, the Chief IP Officer must possess the relevant technical and scientific background, experience and know-how to perform such role<sup>16</sup>. He or she must possess relevant industry certification(s) that must be renewed.

### **5) Cybersecurity Safeguard Listing Requirement**

It goes without saying that companies are living in an age of rampant cybersecurity attacks. The list of publicly listed companies who have lost or are facing massive shareholders' class action litigations against them and their board of directors is growing every quarter. For example, a shareholders' class action lawsuit<sup>17</sup> was filed against Yahoo! and its board of directors in January 2017 for mishandling cybersecurity breaches and response protocols.

The *2017 Cost of Data Breach Study: Global Overview*<sup>18</sup> conducted by the Ponemon Institute and IBM Security studied 419 companies in 13 countries who have suffered data breaches. It found that 27.7 percent of these companies will suffer another material data breach in the next 24 months. The study found that US\$3.62 million is the average total cost of a data breach, with US\$141 as the average cost per lost or stolen records. Since technology companies are more vulnerable to cyberattacks (because of increased reliance on the digital medium), the HKEX should impose a qualitative listing requirement mandating that applicants to e-Tech Board appoint at least one independent director with cybersecurity background, knowledge or know-how. This helps ensure that the board members of issuers would have the requisite guidance to be able to ask management the right questions about cybersecurity. Asking the right questions on cybersecurity sets the best "tone from the top" to push timely and effective cybersecurity controls throughout the issuer. Many times, the major stumbling block towards adequate cybersecurity protocols is the issuer's board of directors unfortunately. This is natural because most board members come from non-IT or technology backgrounds. Most have probably been born significantly before the dawning of the "digital age". As such they would not be in the best position to ask management the right questions, absent some independent expert assisting them on the board.

This cybersecurity listing requirement has three parts.

First, the applicant must appoint an independent director with cybersecurity background, knowledge or know-how. Since cybersecurity is a dynamic field (with new attack vectors every month), the HKEX must be flexible in setting the requisite minimum requirements. Setting the requirement too high would make it difficult for the issuer to find and hire an independent director who can meet such standards (considering that there is already a global shortage of qualified cybersecurity professionals). There are several major certification bodies for

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<sup>16</sup> This is similar to the requirements of many stock exchanges of requiring the appointment of an accounting and financial expert board member.

<sup>17</sup> <https://finance.yahoo.com/news/shareholder-class-action-filed-against-191200038.html>

<sup>18</sup> <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=SEL03130WWEN>

cybersecurity and infosec, such as CISSP<sup>19</sup> and GIAC<sup>20</sup> whose certifications the HKEX can consider recognising for purposes of this listing requirement.

Second, the applicant should be permitted to hire an independent cybersecurity advisor to its board of directors if it is unable to retain an independent director satisfying HKEX requirements on a timely or cost-effective basis. Such an applicant would need to disclose publicly such fact and undertake to continue to find such a director diligently.

Thirdly, the applicant is required to appoint either its Chief Technology Officer or Chief Information Security Officer (or both) to its board of directors as an executive (non-independent) member to assist the board on related matters and provide the internal clout needed for him or her to implement company-wide cybersecurity related controls. This also ensures that the company's technical IT teams maintain a line of communications directly to the board room to ensure quick cyber incident response actions. The better that an issuer manages its cybersecurity risks, the better its corporate assets and shareholders' value can be safeguarded.

#### **Part IV: Other Technology Companies-friendly Reforms**

The HKEX has expressed its desire to attract well capitalised mature technology issuers to list on its exchanges, particularly its "New Board: Premium<sup>21</sup>". The wisdom of allowing such issuers to list with non-standard governance structures is discussed in Part VI. Here, the focus is on allowing mature private tech companies to list their shares without an initial public offering (since many "unicorns" are already well-capitalised but may be concerned about the cost traditionally associated with an IPO.)

The HKEX may consider the recent "direct listing" proposal<sup>22</sup> published by the New York Stock Exchange to allow issuers to list without the usual process of an underwritten IPO and registering under the U.S. securities law. Well capitalised private tech companies may wish to list on a public exchange in order to provide greater liquidity for their founders, investors and employees to "cash out" on some or all of their initial investments and to attract an international following of analysts. HKEX is recommended to impose similar safeguards on such direct listings. For example under the NYSE proposal, a private company must provide an independent third-party valuation demonstrating that it has a market value of at least US\$250 million in qualifying shares and the valuation agent employed satisfies certain competency and independence requirements.

Another reform would be the establishment of an HKEX index (similar to the NASDAQ 100) that includes only the largest domestic and international companies listed on the HKEX Main Board, GEM or e-Tech Board based on market capitalization. The Index will include only technology or pharmaceutical companies including computer hardware and software,

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<sup>19</sup> [www.isc2.org](http://www.isc2.org), which is held for example by the current Senior Advisor to the Chairman of the U.S. SEC for Cybersecurity Policy. See <https://www.sec.gov/news/press-release/2017-126>

<sup>20</sup> [www.giac.org](http://www.giac.org)

<sup>21</sup> Concept Paper at p.7.

<sup>22</sup> See [Notice of Filing of Proposed Rule Change to Amend Section 102.01B of the NYSE Listed Company Manual](#), Exchange Act Release No. 80933 (Jun. 15, 2017).

telecommunications, biotechnology, and issuers commercialising the technologies listed on Exhibit 1. The index will exclude securities of financial companies including investment companies and companies in the “low growth sectors<sup>23</sup>”.

## **Part V: Fostering a Technology-driven Ecosystem**

The e-Tech Board should be part of a broader marketing plan to deliver a complete package to promote and develop Hong Kong into a listing centre for world-class technology companies. This requires the creation and fostering of an ecosystem of technology venture capitalists, investors, industry experts, developers, engineers, cybersecurity experts and scientists in order to foster the sustainable growth of Hong Kong as a financial and technological hub of the world.

### **A) Looking Beyond HK’s Traditional Strengths**

Executive Chairman of Alibaba Jack Ma coined the term “techfin” because he feels that technology empowers small businesses and the younger generation whereas “fintech” empowers traditionally entrenched financial institutions<sup>24</sup>. Hong Kong has traditionally been strong in all areas of “fin” or finance. However in the 21st century, technology (or the “tech” in techfin) has been playing and will continue to play an ever increasingly important role in all aspects of our life. Therefore like tech guru Jack Ma, Hong Kong needs to be thinking about putting “tech” before “fin” to attract world-class issuers and remain relevant in the 21st century. It needs to do so by leveraging its natural competitive advantages: its strategic location to China and a talented human resource pool that can be developed into future entrepreneurs through innovative incubation programs.

### **B) Leveraging HK’s Unique Geographic Location**

Prada chose to list its shares in Hong Kong because of its proximity to China, its largest target market. Even though Prada is not in the technology business, this logic applies to the world’s tech startups who have been eyeing China’s vast potential. This Letter explored the strategies to attract them to list in Hong Kong. Here we will focus on how HKEX can make its exchanges more attractive to Chinese technologies startups located across its border in Shenzhen and Hangzhou, two of the most booming technology startup centres in the world. Many commentators<sup>25</sup> have noted that both of these locations are challenging Silicon Valley’s dominance. China’s largest tech companies have significant operations in both of these locations. Although most of these tech giants are publicly listed entities, the hundreds if not thousands of startup companies in which these giants have invested are still looking for a venue to publicly list their shares. The question becomes how will the HKEX attract them? Even

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<sup>23</sup> Concept Paper at p.11.

<sup>24</sup> See <https://www.cnbc.com/2017/06/21/cnbc-exclusive-cnbc-excerpts-alibaba-executive-chairman-jack-ma-speaks-with-cnbc-david-faber-from-alibabas-gateway-17-event.html>

<sup>25</sup> [http://www.nature.com/nature/journal/v545/n7654\\_supp/spot/full/545S29a.html?foxtrotcallback=true](http://www.nature.com/nature/journal/v545/n7654_supp/spot/full/545S29a.html?foxtrotcallback=true)

<sup>26</sup> Concept Paper at p.10,

though HKEX observed that a disproportionate<sup>26</sup> number of Chinese firms have been listed on the HKEX, the vast majority of these firms are not technology companies<sup>27</sup>.

It is fair to say that in general the Hong Kong exchanges are perceived to be more compliance-driven, transparent and international with wide use of the English language. It is hoped that, with the implementation of the tech-driven qualitative listing requirements discussed in Part III above, Hong Kong's exchanges will also be perceived to be more technology-friendly because it has imposed requirements that forces an issuer to consider IP protection by design early in its listing process (and not after when it is facing an infringement lawsuit). These natural advantageous will attract both international and Chinese world-class tech companies because the Hong Kong market has set itself apart from the proverbial "race to the bottom" by aiming for the top.

### **C) Incubating the Future of Hong Kong**

HKEX should consider stepping up its incubation program because there does not seem to be an entity leading the initiative to attract more tech firms to list in Hong Kong. To achieve that goal requires an ecosystem of related tech professionals. To start, creating and fostering an innovative incubation program to promote technology startups in Hong Kong has the following benefits:

- raising awareness on the importance of Tech-IP;
- educating entrepreneurs on the new e-Tech Board qualitative listing requirements by exposing them to these concepts early on in the start-up process;
- locking in interest earlier amongst entrepreneurs to list on HKEX, their initial contact point;
- networking and cross-seeding opportunities amongst Main Board, GEM and e-Tech Board to generate potential new business opportunities and new startups invested by traditional companies listed on the Main Board & GEM; and
- educating traditional companies like insurance, property, shipping and banking sectors on the benefits of an IP driven business model to help them achieve their digital transformation that may generate new issuers on HKEX.

### **Part VI: Wait & See on Weighted Voting Rights**

The Concept Paper proposes that mature companies with weighted voting rights ("WVR") be allowed to list on a new board premium, accessible to retail and professional investors<sup>28</sup>. This Letter cautions the HKEX on this move because global investors have made their preferences against WVR felt worldwide. For example, on July 31, the S&P Dow Jones Indices announced that effective August 1, 2017, it would take immediate action to fully exclude companies with multiple-class share structures from entering its S&P Composite 1500 and component indices. Further, on July 26, FTSE Russell announced that it plans to exclude

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<sup>27</sup> *Ibid.* at p.12.

<sup>28</sup> *Ibid.* at p. 26.

companies, like Snap Inc., with little, or no, voting rights from its indices<sup>29</sup>. From a corporate governance perspective, the WVR structure does not appear to be popular amongst global investors<sup>30</sup>.

#### **A) Not all WVRs are the Same**

Not all WVRs serve the same purpose. Some WVRs like that used by Snap Inc. are intended to keep control of the company firmly in the hands of its founders or venture capital investors. The laws of the jurisdiction of the issuer does not usually prohibit or restrict foreign ownership of its line of business. For example, U.S. federal and state laws do not in general prohibit foreign ownership of Snap Inc.'s business. Since the focus of these WVRs is meant to keep control of the issuer to a few key persons, HKEX should restrict the ability of these key persons from selling or transferring their voting shares when the company performs poorly to prevent a "run" on its share price.

The situation is made even more complicated by the laws of certain major jurisdictions that forbid foreign ownership in specified industry sectors, which includes most technology-intensive areas like the internet and e-commerce. When regulated issuers in such sectors seek to list on a foreign stock exchange, they often use WVR in the context of variable interest entities ("VIE") to shield their corporate ownership interests from direct foreign control. This structure has been in use since 2000 without any major problems. However, the draft foreign investment law of a major jurisdiction (which is home to most of the issuers using such WVR structures in overseas exchanges) is currently under review. Some commentators have cautioned that the draft foreign investment law of such jurisdiction may subject "VIE contracts and direct investment to the same regulatory restrictions. As such, the current rationale for implementing a VIE structure would likely no longer exist and it is likely that VIEs will no longer be viable in many instances since contractual control would be treated the same as a direct investment<sup>31</sup>." If this is true, then one can imagine the painful unwinding of VIE structures on global stock exchanges, much to the detriment of shareholders' protection and welfare.

This draft law has been introduced in 2015 after most of the world's stock exchanges have accepted WVR variable interest entities to list. Since HKEX has not done so, it is in an enviable pole position to wait and see whether the new law will subject VIE contracts to the same regulatory restrictions on foreign ownership of sensitive tech industries.

Assuming that VIE entities will remain unaffected after the passage of said draft law, the HKEX may consider allowing mature technology issuers with WVR to list on its Main Board (not e-Tech Board) subject to all the technology-driven qualitative listing requirements discussed in Part III above. The reason for listing a mature issuer with WVR on the Main Board and not GEM nor the e-Tech Board is to ensure that its corporate governance structures (less its WVR) can

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<sup>29</sup> <https://corpgov.law.harvard.edu/2017/08/05/sp-and-ftse-russell-on-exclusion-of-companies-with-multi-class-shares/>

<sup>30</sup> See here for counter-arguments that excluding companies with WVRs is damaging to capital raising at <https://www.wsgr.com/WSGR/Display.aspx?SectionName=publications/PDFSearch/wsgalert-multi-class-companies.htm>

<sup>31</sup> <http://www.hk-lawyer.org/content/prc-issues-draft-foreign-investment-laws>

be subject to the strictest standard applicable in the HKEX so as to assuage the concerns of global investors opposing WVRs.

### **Part VII: Conclusion**

As Jack Ma noted, the world should view “fintech” as “techfin”, putting tech first. Likewise putting technology first should be the over-arching goal of the HKEX in its reform to attract more technology issuers. Once a clear goal has been set, designing reform measures becomes easier since regulators and public investors are working with a tangible technology-oriented goal in mind.

This Letters proposes the creation of a new third board “e-Tech Board” to exclusively list the shares of small cap technology firms. Because of five pioneering technology-driven qualitative listing requirements below, these shares can be opened up to public retail and professional investors. The need for greater liquidity and issuer diversity is balanced against the need to align shareholders and issuers’ interests through the adoption of the below qualitative listing requirements:

- technology & IP due diligence;
- trade secret registration;
- IP friendly work place certification;
- chief IP officer certification; and
- cybersecurity safeguard.

There are two ways to attract business for the HKEX: either cut standards which would create a “race to the bottom” mentality or balance the need for issuer diversity with conservative corporate governance principles, robust shareholders’ protection and sound risk management.

respectfully submitted,

By: /s/ William Ting  
William Ting

## **Exhibit 1**

### **Emerging Technologies Areas:**

virtual reality  
augmented reality  
cloud computing  
intent based networking  
virtual network functions  
smart cars  
Internet of Things  
robotics  
big data  
analytics  
blockchain  
fintech  
medical exoskeletons and wearables  
drones  
lawtech  
deep learning  
cybersecurity  
3D printing  
brain/machine interfaces  
cryptocurrencies  
prescriptive analytics  
artificial intelligence & machine learning  
seamless multi-cloud operations  
hybrid wireless  
DNA computing  
shared digital identities  
embeddables  
smart tattoos  
nano devices  
bioprinting  
management by AI  
volumetric displays  
customer journey management  
social business  
open API  
collaborative economy  
contextual computing  
4D printing  
5G  
real-time stream processing  
lowcode  
digital learning  
digital transformation  
target platforms  
microservices



digital twins  
multi-channel digital experience  
marketing integration  
adaptive cybersecurity  
smart advisors  
chatbots  
edge computing  
fog computing  
work place hubs  
mobile payments  
wearable IT

## Part B Consultation Questions

Please reply to the questions below that are raised in the Concept Paper downloadable from the HKEX website at:

<http://www.hkex.com.hk/eng/newsconsul/mktconsul/Documents/cp2017061.pdf>

Please indicate your preference by checking the appropriate boxes.

Where there is insufficient space provided for your comments, please attach additional pages.

1. What are your views on the need for Hong Kong to seek to attract a more diverse range of companies and, in particular, those from New Economy industries to list here? Do you agree that the New Board would have a positive impact on Hong Kong's ability to attract additional New Economy issuers to our market?

Please give reasons for your views.

Please see my attached comment letter. HKEX should seek to attract emerging technologies issuers.

2. What are your views on whether the targeted companies should be segregated onto a New Board, rather than being included on the Main Board or GEM?

Please give reasons for your views.

Please see my attached comment letter.

3. If a New Board is adopted, what are your views on segmenting the New Board into different segments according to the characteristics described in this paper (e.g. restriction to certain types of investor, financial eligibility etc.)? Should the New Board be specifically restricted to particular industries?

Please give reasons for your views.

New Board to list only technology issuers. Companies with WVR should be required to list on Main Board (if at all) where they will be subject to higher corporate governance standards. Please see my attached comment letter.

4. What are your views on the proposed roles of GEM and the Main Board in the context of the proposed overall listing framework?

Please give reasons for your views.

These existing boards should be integrated into overall goal of attracting tech issuers. Please see my attached comment letter.

5. What are your views on the proposed criteria for moving from New Board PRO to the other boards? Should a public offer requirement be imposed for companies moving from New Board PRO to one of the other boards?

Please give reasons for your views.

Issuer moving out of new board should be placed on a fast track towards either GEM or Main Board with less procedural requirements and treated with expedited preferred treatment.

6. What are your views on the proposed financial and track record requirements that would apply to issuers on New Board PRO and New Board PREMIUM? Do you agree that the proposed admission criteria are appropriate in light of the targeted investors for each segment?

Please give reasons for your views.

Lowering Quantitative requirements encourages race to the bottom. Instead impose technology-driven Qualitative requirements. See attached comment letter.

7. What are your views on whether the Exchange should reserve the right to refuse an application for listing on New Board PRO if it believes the applicant could meet the eligibility requirements of New Board PREMIUM, GEM or the Main Board?

Please give reasons for your views.

Agreed to maintain relevance of existing boards and prevent Main Board issuers from taking advantage of reforms.

8. What are your views on the proposed requirements for minimum public float and minimum number of investors at listing? Should additional measures be introduced to ensure sufficient liquidity in the trading of shares listed on New Board PRO? If so, what measures would you suggest?

Please give reasons for your views.

Lowering Quantitative requirements encourages race to the bottom. Instead impose technology-driven Qualitative requirements. See attached comment letter.

9. What are your views on whether companies listed on a Recognised US Exchange that apply to list on the New Board should be exempted from the requirement to demonstrate that they are subject to shareholder protection standards equivalent to those of Hong Kong? Should companies listed elsewhere be similarly exempted?

Please give reasons for your views.

Companies listed in OECD exchanges such as USA, Japan and Germany should be given reciprocal expedited treatment. Those in non-OECD jurisdictions should be scrutinized more.

10. What are your views on whether we should apply a “lighter touch” suitability assessment to new applicants to New Board PRO? If you are supportive of a “lighter touch” approach, what relaxations versus the Main Board’s current suitability criteria would you recommend?

Please give reasons for your views.

Lowering Quantitative requirements encourages race to the bottom. Instead impose technology-driven Qualitative requirements. See attached comment letter.

11. What are your views on whether the New Board PRO should be restricted to professional investors only? What criteria should we use to define a professional investor for this purpose?

Please give reasons for your views.

Lowering Quantitative requirements encourages race to the bottom. Instead impose technology-driven Qualitative requirements that can open the third board to retail and professional investors. See attached comment letter.

12. Should special measures be imposed on Exchange Participants to ensure that investors in New Board PRO-listed securities meet the eligibility criteria for both the initial placing and secondary trading?

Yes

No **NO**

Please give reasons for your views.

Lowering Quantitative requirements encourages race to the bottom. Instead impose technology-driven Qualitative requirements. See Part III of attached comment letter.

13. What are your views on the proposal for a Financial Adviser to be appointed by an applicant to list on New Board PRO, rather than applying the existing sponsor regime? If you would advocate more prescriptive due diligence requirements, what specific requirements would you recommend be imposed?

Please give reasons for your views.

See qualitative requirement in Part III of attached comment letter.

14. What are your views on the proposed role of the Listing Committee in respect of each segment of the New Board?

Please give reasons for your views.

Listing Committee should consist of members with Intellectual Property background to screen worthy candidates for third board.

15. Do you agree that applicants to listing on New Board PRO should only have to produce a Listing Document that provided accurate information sufficient to enable professional investors to make an informed investment decision, rather than a Prospectus? If you would advocate a more prescriptive approach to disclosure, what specific disclosures would you recommend be required?

Yes

No **NO**

Please give reasons for your views.

See Part III of attached comment letter for additional qualitative listing requirements

16. What are your views on the proposed continuous listing obligations for the New Board? Do you believe that different standards should apply to the different segments?

Please give reasons for your views.

See Part III of attached comment letter for additional qualitative listing requirements

17. For companies that list on the New Board with a WVR structure, should the Exchange take a disclosure-based approach as described in paragraph 153 of this Concept Paper? Should this approach apply to both segments of the New Board?

Please give reasons for your views.

See Part VI of the attached comment letter

18. If, in addition, you believe that the Exchange should impose mandatory safeguards for companies that list on the New Board with a WVR structure, what safeguards should we apply? Should the same safeguards apply to both

segments of the New Board?

Please give reasons for your views.

See Part VI of the attached comment letter. Strict lock-up periods for control persons.

19. Do you agree that the SEHK should allow companies with unconventional governance features (including those with a WVR structure) to list on PREMIUM or PRO under the “disclosure only” regime described in paragraph 153 of the Concept Paper, if they have a good compliance record as listed companies on NYSE and NASDAQ? Should companies listed elsewhere be similarly exempted?

Please give reasons for your views.

See Part VI of attached comment letter.

20. What are your views on the suspension and delisting proposals put forward for the New Board?

Please give reasons for your views.

Fine



21. Should New Board-listed companies have to meet quantitative performance criteria to maintain a listing? If so, what criteria should we apply? Do you agree that companies that fail to meet these criteria should be placed on a “watchlist” and delisted if they fail to meet the criteria within a set period of time?

Please give reasons for your views.

See Part III of attached comment letter.

22. Do you consider that an even “lighter touch” enforcement regime should apply to the New Board (e.g. an exchange-regulated platform)?

Yes

No **NO**

Please give reasons for your views.

See part III of comment letter as attached.

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End

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