

## BRIEFING NOTE FOR FIRST MINISTER

### HONG KONG – BRITISH CHAMBER OF COMMERCE NETWORKING LUNCH

FRIDAY 13 APRIL 2018

<b>Key Messages</b>	<ul style="list-style-type: none"><li>• The Scottish Government is committed to help Scottish companies internationalise. Gain insight on how we can further drive forward Scotland's international competitiveness.</li><li>• We want to do everything possible to help Scottish companies target new opportunities in Hong Kong.</li><li>• Scotland is open for business with Hong Kong and we are keen to continue our long history of collaboration. Scotland's warm welcome extends to the whole world. Students, immigrants and refugees from <b>180</b> countries have chosen Scotland as their home.</li><li>• Our trading relationship is stronger than ever before, with Scottish exports to Hong Kong now standing at <b>£220m (HKD2,439m)</b> (2016) annually.</li><li>• Our world class innovation has led to Scotland attracting more R&amp;D projects than any other part of the UK, including London.</li><li>• Today's event will help us to understand and respond to the challenges and opportunities companies face locally.</li><li>• The Scottish Government's recent Enterprise and Skills review emphasised the need for greater partnership and collaboration: delighted to be undertaking this event in conjunction with the Scottish Chambers of Commerce and supported by the British Chamber of Commerce in Hong Kong (Scottish Business Group)</li></ul>
<b>What</b>	<ul style="list-style-type: none"><li>• A paid-for event comprising speech, networking lunch and Q&amp;A session.</li></ul>
<b>Why</b>	<ul style="list-style-type: none"><li>• Recognise our longstanding and rapidly expanding trade and investment relationship with Hong Kong.</li><li>• Engage with key business leader's active in the Hong Kong market and gather insights about the challenges and opportunities companies face locally.</li><li>• Promote Scotland's capabilities as a leading location for collaboration between industry and academia and a rich source of innovation.</li><li>• Build relationship at senior level with Hong Kong business leaders for follow up by SDI Hong Kong team.</li></ul>
<b>Who</b>	<ul style="list-style-type: none"><li>• Approx. <b>90</b> stakeholders from the Scottish business community in Hong Kong.</li><li>• Guests from British Chamber Hong Kong and Scottish Chamber of Commerce, Hong Kong and Shenzhen company representatives and GlobalScots.</li><li>• <i>(See Annex B &amp; C for full list)</i></li></ul>
<b>Where</b>	Island Shangri-La Hotel, Atrium, Level 39, Pacific Place, Supreme Court Road, Central, Hong Kong SAR

<b>When</b>	<b>13:00-14:30</b> 13:00 – FM arrives, VIP networking 13:15 – Guests seated for lunch (starter already plated) 13:20 – John Bruce, Chairman BritCham Scottish Business Group, welcome 13:30 – Main course served 13:50 – Desert and coffee served 13:55 – Mark Greenberg, Chairman BritCham introduces FM 14:00 – FM speech 14:10 – Q&A (moderated by John Bruce) 14:30 – Close
<b>Themes</b>	Scotland being open for business, market insights from business community, increasing Chinese outbound investment to Scotland.
<b>Media</b>	N/A
<b>Supporting Officials</b>	[REDACTED] Executive Director, Asia Pacific, SDI [REDACTED] [REDACTED] [REDACTED]
<b>Attached documents</b>	Annex A – Summary Page Annex B – Key Guests [REDACTED] Annex D – Key Messages for Hong Kong Business Audience

## SUMMARY PAGE

**Purpose:**

- To thank the Scottish community and friends of Scotland for the work they do in helping and promoting Scotland in Hong Kong.
- Recognise our longstanding and rapidly expanding trade and investment relationship with Hong Kong.
- Engage with key business leaders active in the Hong Kong market and gather insights about challenges and opportunities companies face locally.
- Promote Scotland's capabilities for being a leading location for collaboration between industry and academia and a rich source of innovation.
- Build relationship at senior level with Hong Kong business leaders for ongoing follow up by SDI Hong Kong team.

**Key Facts:**

- **15** Hong Kong owned enterprises operating at **50** local business sites, employing **930** Scottish staff with total Scottish turnover of **£571m / HKD6,331m** (2017).
- Scottish exports to Hong Kong (2016) stood at **£220m / \$306m / HKD2,439m**
- **15,464** Hong Kong visitors visited Scotland in 2016, spending **£6.67m / HKD73.9m** (31% decrease on 2015).
- **23** GlobalScots in market.
- SDI secured **7,839** jobs in Scotland during 2016/17, an increase of **10%** on previous year.
- EY ranked Scotland as the **most attractive UK location** for FDI, outside London for **5<sup>th</sup>** year in a row. **122 FDI projects** in 2016.
- More R&D projects than any other UK region in 2016, including London.
- Scotland's largest cities (Glasgow, Edinburgh, Aberdeen) in the UK's top 10 for FDI.
- Graduate pipeline from **5** of the world's **top 200 universities**.
- Scotland has **28% of the UK's spin-out** companies compared to London's 18%.

**KEY GUESTS**

**Mark Greenberg**

**Group Strategy Director, Jardine Matheson Holdings Limited**

**Chairman, British Chamber of Commerce Hong Kong**



Joined Jardine's Board as Group Strategy Director 2008 having first joined the Group 2006. Previously spent 16 years in investment banking with Dresdner Kleinwort Wasserstein in London. Also, a director of Dairy Farm, Hongkong Land, Jardine Cycle & Carriage, Mandarin Oriental, and a Commissioner of Astra and Bank Permata. Educated at Hertford College, Oxford University, MA Modern History.

**John Bruce**

**Managing Director, Hill & Associates**

**British Chamber of Commerce Hong Kong, Chairman Scottish Business Group**



John has headed up the gaming portfolio of Hill & Associates as MD since 2003 and has significant experience in assisting both operators and investors in understanding the complex nature of the Asian gaming business and the individuals and corporations involved in it. Educated at Dumfries Academy and University of Glasgow.

**Liz Cameron OBE**

**Chief Executive/Director Scottish Chambers of Commerce.**

Senior business leader in Scotland with expertise in all business areas. Career



spanning three decades, at the forefront of Scottish business, recognised as one of the most powerful forces in the business community.

CEO Roles at Scottish Chambers since October 2004, previously CEO Renfrewshire Chambers (1996-2004) and CEO Renfrewshire and West of Scotland Local Employer Network (1991-1996).

[REDACTED]

## ANNEX D

### KEY MESSAGES FOR HONG KONG BUSINESS AUDIENCE

#### Scotland's economy

- Scotland's jobless total rose by 14,000 in the final three months of 2017 to stand at 124,000, taking the unemployment rate from 4% to 4.5% - above the UK rate of 4.4%.
- Even without oil, **GDP per head in Scotland is higher than the UK** average excluding London & South East.
- **Productivity in Scotland is growing much faster** than the rest of the UK. It is currently **7.6%** higher than before the recession vs. UK growth of only 0.4%. **2017 Q3 results** (latest) show productivity decreased by 3.2% in real terms (inflation adjusted) in Scotland.
- Multi-billion-pound infrastructure plan and a **£500m** / HKD5,544m Scottish Growth Scheme.
- **30,000 Modern Apprenticeships** per year by 2020 and a **£5bn** / HKD55.44bn investment in higher education over the last five years.

#### Brexit

- SG paper indicates Scottish GDP could be up to **£11.2bn** / **HKD124.2bn lower by 2030** compared to forecast GDP in the absence of Brexit.
- Scotland exported **£12.7bn** / **HKD140bn to EU** in 2016 – 17% of total international exports.
- EY survey finds that over half (52%) of investors into the UK say that leaving the European Single Market makes the UK less attractive as an investment location.
- **1,040** EU owned companies in Scotland employing over **121,600** people, turning over **£35.3bn** / **HKD391.4bn** (2017).
- Around **181,000 EU citizens** live in Scotland, bringing important skills and expertise.

#### Scotland's strengths

- Graduate pipeline from **5** of the world's **top 200 universities**.
- Scotland has **28% of the UK's spin-out** companies compared to London's 18%.
- Scotland has more computer science startups than Oxford and Cambridge combined.
- **Edinburgh has the most active tech innovation community outside of London**, closely followed by Glasgow in 4th place (out of 36 countries). (Open Data Institute).
- Scotland **2nd top place** to visit in the world in 2017 (Rough Guide) and Edinburgh voted UK's Top City by Guardian Travel awards **13** consecutive years.
- Operational cost savings of up to **30-40%** compared to London.

## Universities

- More world-class universities than any other country by head of population.
- Every year 19 universities work with over **19,000** different organisations, (10,000 in Scotland), to develop new products and processes.
- **85%** of employers say they are satisfied/very satisfied with work-readiness of our graduates.
- **25,000** European and **31,000** international students.
- Campuses in Singapore, India, Dubai, Malaysia, the USA, and South Korea.
- **86%** of Scottish research judged to have “outstanding” or “very considerable” impact.
- Over **11,000** students a year take part in their universities’ entrepreneurship activities.
- **433 graduate start-ups** active last year with a total turnover of **£41m / HKD454m**. Number of graduate startups increased by **14%** in the last 3 years.

## Inward investment

- EY ranked Scotland as the **most attractive UK location** for FDI, outside London for **5<sup>th</sup>** year in a row. **122 FDI projects** in 2016.
- More R&D projects than any other UK region in 2016, including London.
- Scotland’s largest cities (Glasgow, Edinburgh, Aberdeen) in the UK’s top 10 for FDI.
- SDI secured **7839** jobs in Scotland during 2016/17, an increase of **10%** on previous year.
- London is an important partner for us. Together, we attract the majority of FDI projects to the UK. Many companies which have their front office in London rely on Scotland and its strong talent pool to deliver middle and back office functions.
- Innovation and investment hubs in London, Brussels and Dublin. Paris and Berlin to follow.

## International trade

- Export Statistics Scotland: Scotland’s international exports (excluding oil and gas) increased in 2016 by **£460m / HKD5,100m (1.6%)** from £29.3bn (HKD324bn) in 2015 to **£29.8bn / HKD330.4bn** in 2016.
- Scottish exports to Non-EU countries increased by £565m / HKD6,265m (3.4%) to **£17.1bn / HKD189.6bn** in 2016.

## Hong Kong’s economy:

- **GDP purchasing power parity: US\$453bn / £322bn / HKD3,570bn**
- **GDP growth rate: 3.5% (2017 est.)**

- **93% of GDP from rapid expansion in services sector: financial services, tourism, trading & logistics, professional services.**

#### **Inward investment between Hong Kong and Scotland:**

- **15** Hong Kong owned enterprises operating at **50** local business sites, employing **930** Scottish staff with total Scottish turnover of **£571m** / HKD6,331m (2017).
- Hong Kong-based crypto-currency R&D specialist **IOHK** is investing in a research laboratory at **University of Edinburgh's** School of Informatics.
- Hong Kong FinTech company **Transwap** has set up a subsidiary in Edinburgh.
- **Three** (owned by **Hutchison 3G**, subsidiary of Cheung Kong Group) approx. **600** staff (**1000+** in 2016), **30+** retail stores and operates back-office function in Glasgow employing **320** (**850+** in 2016). **Feb 2017** outsourced **400+** jobs to **Capita**, recognising high attrition rates.
- **Topsearch International Holdings Ltd** is engaged in printed circuit board manufacturing and has EU marketing office in Ayrshire Innovation Centre.
- HK clothing manufacturer **Fang Brothers** own **Pringle of Scotland** (**12** employees in Hawick, **£4m** / HKD44.3m turnover).
- Aberdeen subsidiary of HK based **Swire Group, Swire Oilfield Services Limited**, provides transportation equipment and services to O&G industry

## BRIEFING NOTE FOR FIRST MINISTER

### HONG KONG - SCOTLAND BUSINESS INNOVATION FORUM

FRIDAY 13<sup>TH</sup> APRIL 2018

<b>Key Messages</b>	<ul style="list-style-type: none"><li>• Scotland is open for business with Hong Kong and we are keen to continue our long history of collaboration. Scotland's warm welcome extends to the whole world. Students, immigrants and refugees from <b>180</b> countries have chosen Scotland as their home.</li><li>• Our trading relationship is stronger than ever before, with Scottish exports to Hong Kong now standing at <b>£220m</b> (2016) annually.</li><li>• Although a small country, Scotland has <b>5</b> of the World's top <b>200</b> Universities. All of them are represented here today and are eager to stimulate strong industrial collaborations and partnerships with Chinese businesses.</li><li>• This world class innovation has led to Scotland attracting more R&amp;D projects than any other part of the UK, including London.</li><li>• Today's event will help us to understand and respond to the demand in Hong Kong for data-driven innovation, particularly AI and precision medicine, more fully.</li><li>• You will also see the new national brand for Scotland, '<b>Scotland Is Now</b>'. This is a collective and collaborative opportunity which recognises Scotland as a bold and positive country, rich in history and heritage but forging forward in a way that is progressive, pioneering and inclusive.</li><li>• Scotland is home to <b>2,350</b> foreign owned enterprises. I very much hope to be able to convince you to come and meet them and understand why they chose Scotland for yourselves.</li></ul>
<b>What</b>	<ul style="list-style-type: none"><li>• A business event, private networking session, speeches theatre style, panel discussion and videos.</li><li>• Witnessing of MoU signing of University of Edinburgh and Hua Xia Healthcare</li></ul>
<b>Why</b>	<ul style="list-style-type: none"><li>• Recognise our longstanding and rapidly expanding trade and investment relationship, especially in sectors such as energy, technology, education, food and drink, AI, data analytics, life sciences, financial services and fintech.</li><li>• To better understand the strong need and demand in Hong Kong for cutting edge technology and innovation that will take Hong Kong forward.</li><li>• Raise awareness in Hong Kong of Scotland being a leading location for collaboration between industry and academia and a rich source of innovation.</li><li>• Introduce leading Scottish capability in the areas of big data, precision medicine and artificial intelligence for more detailed discussion and follow up.</li></ul>



<b>Who</b>	<ul style="list-style-type: none"> <li>• <b>80+</b> targeted Hong Kong and Shenzhen company representatives and influencers from technology and life sciences sectors.</li> <li>• Approx. <b>10</b> targeted VIP company representatives and influencers for panel discussions.</li> <li>• <i>(See Annex B &amp; C for full list)</i></li> </ul>
<b>Where</b>	KPMG 23 <sup>rd</sup> floor, Hysan Place, 500 Hennessy Rd, Causeway Bay, Hong Kong
<b>When</b>	<p><b>15:00-16:20</b></p> <p>15:00 – FM arrives KPMG office, VIP networking  15:10 – Forum begins with introduction by MC, Robert Koepp  15:15 - <b>FM presentation</b>  15:25 – Guest speaker – Nicholas Yang, Secretary for Innovation and Technology  15:35 – Guest speaker – Doris Luey, Head of Social Innovation, New World Development Company Limited  15:45 – Promotional Videos on Scotland is Now, Engage Invest Exploit  15:45 – <b>FM departs main venue</b> to green room  15:55 – FM to present the Hall of Fame to Globalscot, Vincent Connor  16:05 – FM to witness MOU signing of University of Edinburgh and Hua Xia Healthcare  16:20 - FM departs</p> <p>Note: Following FM’s departure panel discussions on Life Sciences/Precision Medicine and AI/Data Analytics/Fintech will follow.</p>
<b>Themes</b>	<i>Trade and investment, Data Driven Innovation within Precision Medicine, Artificial Intelligence and Fintech</i>
<b>Media</b>	In attendance. No announcements, SDI will coordinate social media and pictures and issue a press release to media.
<b>Supporting Officials</b>	[REDACTED] Executive Director, Asia Pacific, SDI [REDACTED] [REDACTED]
<b>Attached documents</b>	Annex A – Summary Page Annex B – Key Guests [REDACTED] Annex D – Hong Kong Key Facts Annex E - Precision Medicine and Data sector Annex F - Innovation and academic/industrial collaborations Annex G - Scotland’s Investment landscape Annex H – Edinburgh International Hospital Management MoU with Putian City Government

## SUMMARY PAGE

### Purpose:

- Recognise our longstanding and rapidly expanding trade and investment relationship, especially in sectors such as energy, technology, education, food and drink and tourism.
- To better understand the strong need and demand in Hong Kong for cutting edge technology and innovation that will take Hong Kong forward.
- Raise awareness in Hong Kong of Scotland being a leading location for collaboration between industry and academia and a rich source of innovation.
- Introduce leading Scottish capability in the areas of big data, precision medicine and artificial intelligence for more detailed discussion and follow up.
- Witness an MoU signing between MoU signing of University of Edinburgh and Hua Xia Healthcare

### MoU signing and participants:

University of Edinburgh and Putian City

- The MoU will be signed by representatives from Putian Municipal People's Government and Edinburgh International Hospital, Management
- In November 2016, Hua Xia Healthcare funded a 'virtual institute' to support business development efforts, securing a first project in May 2017 (Shenzhen People's Hospital International Diabetes Centre, which won the China-Scotland best Education-Industry collaboration award in February 2018). The 2 partners formed a Joint Venture in March 2018. The MoU signing with Putian will establish and operate a hospital which is the first concrete project of the new JV. This is a direct line between the FM's visit in July 2015 and her April 2018 visit.

### Key Facts:

#### Innovation & data

- More **world-class universities** than any other country by head of population and highest concentration in Europe.
- More R&D projects than any other UK region in 2016, including London, and more spin-outs from Scottish universities than anywhere else in UK.
- **8** innovation centres including Data and Sensors and Digital Health including Data Lab
- Over **1,000** software and digital tech companies. **97k** graduates p/a. **5k** software focussed.
- **Edinburgh** has **one of the biggest digital economy clusters in the UK – 33%** growth in the number of digital companies 2010 to 2013 - **17,100** digital jobs.

- **Edinburgh School of Informatics: 12<sup>th</sup>** of 800 **in the world** and **1st** in **UK** based on 3\* and 4\* research. Largest European centre of its kind with **95 academics, 150 research staff and 1,400 students** from 75 countries.
- **The Edinburgh Centre for Robotics: 30 world leading** investigators from **12** cross disciplinary research groups and institutes.
- **The Artificial Intelligence Research Group** (St Andrews)

### **Financial Services & Fintech**

- Outside of London and the South East, Scotland has the most competitive Financial & Business Services industry cluster in the UK.
- Property and salary costs up to **40% less than London**.
- Global companies with specific FinTech operations in Scotland include; **RBS, JP Morgan, HSBC, Morgan Stanley, Avaloq** and **Standard Life Aberdeen**.
- Buoyant and growing data and analytics community that understands the financial services sector, including financial data analytics specialist companies such as **MiiCard, Symphonic Trust, Money Dashboard and Sumerian**.
- FinTech Scotland will include the development of both a physical **FinTech innovation hub** to encourage growth and acceleration of FinTech companies. Aim to be **top five** global Fintech location by 2020.

### **Technology & Healthcare:**

- Scotland combines clinical expertise, active clinical research and data informatics and extensive e-health records for the development of novel treatments and therapies.
- Proven track record of pioneering invention and medical innovation going back centuries and today more than **7,000** specialists working within the digital health and care technology companies supported by **84,000** digital tech experts.
- Digital health and care innovation centre and growing company base are pioneering development of telehealth and telecare.
- Depth of experience in convergent technologies: micro and nanotechnology, physics and photonics, technical textiles and specialised software.
- **£4m government** investment will co-ordinate precision medicine resources and opportunities across Scotland, bring together the findings from individual research projects and improve information sharing in the fight against diseases.

**SUPPORTING DELEGATION, SCOTLAND****MC: Robert Koepp****Network Director, Hong Kong, the Economist Corporate Network (ECN)**

Robert Koepp is the Hong Kong-based director of The Economist Corporate Network. He brings hands-on executive experience coupled with economic analysis and industry insight to help organisational leaders and their teams gain a holistic, practical appreciation of the opportunities and challenges in China and across other key Asian economies.

Rob began his career in the IT and energy sectors before branching into economic research, finance, and strategic advisory also covering the media, agribusiness, healthcare, consumer goods, and sports sectors. He has held senior positions as a manager or consultant to companies and government agencies in Greater China, Japan, Singapore, and the US.

**Panel Discussions Moderator: Anson Bailey****Head of Consumer and Retail, ASPAC, KPMG**

Anson Bailey has spent the last twenty years working in both industry and professional services covering strategic consulting across a number of countries in the Asia Pacific region including Australia, China, Hong Kong, Malaysia, Singapore and Thailand across a number of different sectors.

Anson joined KPMG in Hong Kong in 1999 and is currently a Partner based in the Hong Kong office supporting the business development efforts across the KPMG China Practice. He is part of the Regional Consumer Markets Practice Leadership team and the High Growth Tech & Innovation Group based in Hong Kong as well as being a member of the Global Technology Innovation Centre.

**Guest Speaker: Mr Nicholas W. Yang, GBS, JP****Secretary for Innovation and Technology, HKSAR**

Mr Yang has been Secretary for Innovation and Technology of the Hong Kong Special Administrative Region since November 2015.

Previously he was Executive Vice President of the Hong Kong Polytechnic University and was appointed as Non-official Member of the Executive Council and Advisor to the Chief Executive on Innovation and Technology in March 2015.

Mr Yang has held various posts in several technology, venture capital and private equity firms and worked as the CEO of Hong

Kong Cyberport Management Company Limited from October 2003 to February 2010. He studied in the United States, gaining a MSc in Electrical Engineering and Business Administration from Stanford University.

### **Doris Luey**

#### **Head of Social Innovation, New World Development Company Limited**



Doris leads the establishment of Eureka Nova for the New World Group. Eureka Nova is committed to nurture entrepreneur spirit and innovation. Doris is also the Executive Director of New World Facilities Management Co Ltd which manages the Youth Square, the Founding Member of Caring for Children Foundation Ltd and Healthy HK, Member of Advocacy & Public Relations Committee of UNICEF, Member of the Museums Advisory Committee (MAC) and Member of the History Sub-committee under the Museum Advisory Committee. Prior to joining New World Group, Doris was the head of marketing, category and communications of Starbucks Coffee Hong Kong.

### **Professor Anna Dominiczak OBE**

#### **Vice Principal & Head of College of Medical, Veterinary & Life Sciences, University of Glasgow**



Honorary consultant physician, Greater Glasgow & Clyde Health Board. Global leading cardiovascular scientist and clinical academic. Major research interests in hypertension, cardiovascular genomics and systems medicine. Research income in last 3 years totals more than £30m.

Fellow of Royal College of Physicians, Academy of Medical Sciences, Royal Society of Edinburgh, American Heart Association and European Society of Cardiology. 250+ publications in peer-reviewed journals, in 2005 services to medicine recognised with an OBE. Graduated from Medical School in Gdansk, Poland.

### **Professor Andrew Biankin**

#### **Director Wolfson Wohl Cancer Research Centre, University of Glasgow**



Cancer Research UK Clinician Scientist, Wellcome Trust Senior Investigator and Fellow of the Royal Society of Edinburgh. Leadership roles in national and international consortia in cancer therapeutic development and cancer genomics. Authored 150+ articles in major journals including seminal works on cancer, genomics and precision medicine. Sits on several international expert panels, advisory boards and is an international leader and expert in precision oncology.

## **Professor Charlie Jeffery**

### **Senior Vice-Principal; Professor of politics, University of Edinburgh**



Appointed Senior Vice-Principal of the University of Edinburgh in 2014, and has held a Chair of Politics at the University since 2004. He previously served as vice-principal for Public Policy (2012-2014), as Director of the Academy of Government (2011-2014), as head of the School of Social and Political (2009-2012), and as co-director of the Institute of Governance (2004-2009). He previously held academic appointments at the University of Leicester and the University of Birmingham where he was appointed professor of German politics in 1999. Charlie has held a number of public advisory and consultancy roles. He has been an advisor to the House of Commons Select Committee and was a member of the McKay Commission examining the issues raised by the West Lothian question (2012-13). Charlie has played a leading role in the public debate about Scotland's independence referendum.

## **Sinclair Dunlop**

### **Managing Partner Epidarex Capital, GlobalScot**



Appointed to current role 2010, Epidarex invests in early-stage, high growth life science and health technology companies in under-ventured markets within UK and US. Previously founded MASA Life Science Ventures, retains Managing Partner role.

Appointed to GlobalScot network 2004. Educated at University of Glasgow in Political Economy, holds an MA in International Relations from Syracuse Uni and an MBA from Columbia Business School.

## **Stephen Phillips**

### **Director-General of Investment Promotion, Invest Hong Kong**

### **The Government of the Hong Kong Special Administrative Region**



Mr Stephen Phillips is the Director-General InvestHK, the Government Department responsible for attracting and facilitating foreign direct investment into Hong Kong. He has worked in Hong Kong holding senior investment banking positions with Deutsche and BZW/Barclays Capital before co-founding a Hong Kong-based group of companies providing IT, financial and consultancy services across Asia. In 2004, Mr Phillips joined UK Trade & Investment (now the UK's Department of International Trade) before becoming the Chief Executive of the China Britain Business Council in 2006, as well as Chairman of the EU China Business Association. Mr Phillips holds a BSc in Chemistry and Law from the University of Exeter.



## **Peter Sun**

### **Co-founder and interim CEO of Metanotitia Inc.**



Metanotitia Inc., is a company that is focused on the development of innovative metabolomics technology for medical diagnoses.

Dr. Sun is also working as:

- Head of Global Partnering, BeiKe Biotech Ltd, a cell therapy and service company based in Shenzhen, China;

- Co-founder, President and CEO of Timmune Biotech Inc., an immuno-oncology company based in Tianjin, China;

- Co-founder and CBO of CellAuto Robotics Inc., a bio-process automation company based in Shenzhen and Hangzhou, China.

Dr. Sun has over 20 years of experience in biotech and pharmaceutical industries. He graduated from Capital Medical University, Peking Union Medical College, and University of British Columbia.

## **Prof. Ronald Li**

### **Department of Paediatrics and Adolescent Medicine,**



Professor Li is Founding Director of the Stem Cell & Regenerative Medicine Consortium and SY and HY Cheng Professor in Stem Cell Biology & Regenerative Medicine.

Professor Li has over 100 publications and his lab has received funding from the National Institute of Health (NIH), California Institute of Regenerative Medicine, Research Grants Council (RGC), etc. He serves as a panel member or reviewer of major funding bodies including the NIH and American Heart Association. Two-time recipient of Top Young Faculty Research Award.

## **Prof. Zhigang TAO (Zhi-Gang Tao)**

### **Faculty of Business and Economics, The University of Hong Kong**



Zhigang TAO is Professor of Economics and Strategy in the Faculty of Business and Economics and the director of the Institute for China and Global Development, The University of Hong Kong. Prior to joining The University of Hong Kong he taught at Hong Kong University of Science and Technology. Professor Tao received his B.Sc. in management science from Fudan University in 1986, and PhD in economics from Princeton

University in 1992.

Senior fellow at Tsinghua University's National Centre of Economic Research and Tsinghua University's Center for China in the World Economy, and visiting professor Fudan University School of Management. Also, co-director of Asia Competitiveness Program of Hong Kong Institute of Economics and Business Strategy.

### **David Lee**

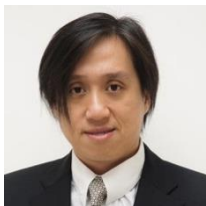
#### **Managing Director, Privé Managers**



David Lee is the Managing Director of the Privé Holdings Limited and is responsible for business innovation, which includes business development, operational performance, investor relations, financial reporting, strategy, and legal and compliance of the organization. David officially joined Privé in March 2016. Prior to joining Privé, David worked as a portfolio manager at a regional private equity fund, in charge of structuring exit strategies for investments. He also successfully managed and supervised the IPO process for a recent listing in Hong Kong. In addition, David also worked in the investment banking industry at Credit Suisse and began his career in New York at Cleary Gottlieb, a Wall Street law firm.

### **Alex Cheung**

#### **Kami.ai CEO**



An entrepreneur and experience IT professional with over 16 years of service planning and IT design, development in both Europe and APAC region. A visionary who believes people could live smarter and better lives with trusted AI technologies.

### **Vincent Connor**

#### **Partner and Head of Office, Hong Kong, Pinsent Masons LLP, GlobalScot**



Vincent Connor is a legal adviser to the Infrastructure sector and specialises in construction and engineering law. He is a solicitor advocate, having been granted higher rights of audience in respect of civil proceedings in Hong Kong. He is rated highly for his advocacy skills in arbitration, litigation, adjudication and ADR. He has also been granted full registration as a registered foreign lawyer with and can appear before the Singapore International Commercial Court (SICC).

He is described by the Asia-Pacific Legal 500 as having "a top reputation" in Construction Law and is included in the top tier of Leading Individuals in Hong Kong for Construction Law in Chambers' Client's Guide.



He is Chairman of the International Infrastructure Forum of The British Chamber of Commerce in Hong Kong.

### **Nick Mackie**

#### **General Manager, Edinburgh International Investments Limited**



Nick Mackie is General Manager of University of Edinburgh – Hua Xia Healthcare joint venture company Edinburgh International Investments Ltd. He leads on development and management of the company's business which is focused on special healthcare projects in China. Currently, the company is supporting the establishment of an international diabetes centre within the city of Shenzhen's leading public hospital.

A seasoned communications specialist with two decades of international experience as a business correspondent, including nine years in China documenting its emergence as a major economic power.

### **Dr David Jiang**

#### **CEO, Hua Xia Healthcare**



Dr David Jiang also Chairs the Board of the University of Edinburgh-Hua Xia Healthcare joint venture company Edinburgh International Investments.

Dr Jiang is a major shareholder of an audiology technology company and visiting professor to several Chinese universities.

He has founded or co-founded 7 technology companies, 3 have gone public while the others are either in pre-IPO stages or continue to develop. Recent interests focus on low carbon

economy and green technologies, in addition to healthcare management.

He has published nearly 200 research articles and granted 60+ patents and 30 trademarks; revenue yielded by the IP transfer has exceeded US\$ 20 million.

### **Charles Swainson**

#### **Honorary Professor, University of Edinburgh**



Professor Charles Swainson is a highly experienced medical director and renal specialist. As Medical Director of the University of Edinburgh-Hua Xia Healthcare JV company Edinburgh International Investments Ltd he is engaged in China healthcare projects. Charles graduated MBChB from Edinburgh and was elected a Fellow of the Royal College of Physicians (FRCP) and Fellow of the Royal College of Surgeons of Edinburgh (FRCS Edinburgh). He is a former advisor to the Scottish Government on

eHealth, Medical Director of NHS Lothian Health Board and Royal Infirmary of Edinburgh 1999-2010 where he also served as consultant renal specialist 1986-2010.

Charles was senior lecturer and renal specialist at the University of Otago, New Zealand, 1982-1986.

**Shen Bolin (SHEN Bo-Lin)**

**Member of the Standing Committee of the Putian City Committee of the Communist Party of China**

He oversees a broad portfolio including municipal routines, municipal office, public record bureau, meeting convening and concurrently chairing the city's labor union. He has been working in Putian government since 1998. He was deputy mayor and member of the Standing Committee of the Communist Party of Putian Municipal Committee from 2015 to 2016, and acted as party secretary of Hanjiang District, Putian from 2011 to 2015.

**Lin Suqiong (LIN Su-Qiong)**

**Director of the State-owned Assets Supervision and Administration Commission of the Putian City People's Government**

SASAC is a commission authorized by the Putian government, and oversees the state-owned assets of the city. Her job is about the government's financial assets across her whole career and was deputy party secretary and director of the commission from 2013 to 2015.

**Lin Xiuji (LIU Xiu-Ji)**

**Communist Party of China Secretary of the Working Committee of the North Shore Economic Development Zone, Meizhou Bay, Putian**

He oversees the economic and social development in Meizhou, including the Mazu City and Health City, and the Dongwu Port Area. Previously he served as the Director and Deputy Secretary of the Organization Department of Licheng District.

**Andrew Heyn**

**Consul General to Hong Kong & Macao**



Andrew Heyn OBE, British Consul General to Hong Kong and Macao, took office in October 2016. Andrew joined the Foreign and Commonwealth Office in 1989 and served in Caracas, Lisbon and Dublin before his most recent overseas posting as Ambassador to Burma.

[REDACTED]

## HONG KONG – KEY FACTS

### Innovation and Technology in Hong Kong:

The latest and major Hong Kong government's innovation and technology policies:

- The Chief Executive's **2017 Policy Address** on Innovation and Technology

Hong Kong Chief Executive announced moves to slash tax rates for businesses and fund billions more in tax deductions for research and development.

The profits tax rate would be halved to **8.25%** for the first HK\$2 million of net gains – the much-anticipated tax break that was a campaign promise and one that would cost the government HK\$5.8 billion in forfeited revenue a year.

The chief executive outlined her government's goal to double the gross domestic spending on research and development from the current **0.73%** of the GDP to **1.5%** per cent within her five-year term. The **0.73%** ratio is equivalent to HK\$18.18 billion based on last year's GDP.

Along with more than HK\$10 billion set aside for university research funding and would provide additional tax cuts to encourage companies to invest in research and development.

The government also proposed that the first HK\$2 million spent on R&D would see a **300%** tax deduction with spending above that seeing a **200%** cut.

- **Hong Kong Budget 2018** with an additional investment of **HK\$50 billion** allotted to developing innovations in the areas of biotechnology, AI, and fintech

Specifically, the HK\$50-billion budget for the technology sector is meant for the following:

- **HK\$20 billion** will be used on the first phase of the Hong Kong-Shenzhen Innovation and Technology Park in the Lok Ma Chau Loop for site formation, infrastructure, superstructure and initial operation.
- **HK\$10 billion** into the Innovation and Technology Fund (ITF). The ITF's financial support for I&T development in Hong Kong has increased from about \$700 million in 2013-14 to \$1.5 billion in 2017-18. It is anticipated that the demand for funds will continue to increase. The ITF will continue to support applied R&D work in Hong Kong with the additional resources.
- **HK\$10 billion** to support the establishment of two Technology Research Clusters on healthcare technologies and on artificial intelligence and robotics technologies, to attract the world's top scientific research institutions and technology enterprises to Hong Kong to conduct more midstream and

downstream R&D projects in collaboration with local universities and scientific research institutions. Such clusters will pool and nurture more technology talent in Hong Kong.

- **HK\$10 billion** is allocated to the Hong Kong Science and Technology Parks Corporation (HKSTPC) to reinforce the role of the Science Park as Hong Kong's flagship technology infrastructure. Of this, about \$3 billion will be used to construct research-related infrastructure and facilities. The remaining \$7 billion will be used for the HKSTPC to enhance support for its tenants and incubatees, and set up a Smart Campus in the Park, etc.

#### **Latest development with South China region on Innovation and Technology:**

In January 2017, Hong Kong and Shenzhen signed a “**Memorandum of Understanding on Jointly Developing the Lok Ma Chau Loop by Hong Kong and Shenzhen**”. Under the agreement, the two cities will jointly develop the Hong Kong/Shenzhen Innovation and Technology Park to foster co-operation about innovation and technological research.

Companies in Hong Kong's technology sector specialise in the commercialisation and application of innovative products and systems, as well as in industrial engineering. Several clusters, comprising local and overseas technology enterprises, actively undertake R&D and innovation-led activities across the territory.

#### **UK and Hong Kong: Memorandum of Understanding on Investment Promotion Cooperation Between Department for International Trade and Invest Hong Kong**

On 24th March 2018, Invest Hong Kong (InvestHK) and the Department for International Trade (DIT) of the United Kingdom signed a Memorandum of Understanding (MOU) on investment promotion co-operation, with a particular focus on innovation and technology and other emerging sectors.

Have reached the following understanding:

- The Participants will exchange information on the investment environment and investment opportunities with a view to promoting investment between the United Kingdom and the Hong Kong SAR and share experiences in attracting foreign investment as well as best practices regarding investment promotion.
- The Participants will encourage interested local companies in setting up or expanding their businesses in the area of the other Participant, particularly those with a technology focus including, but not limited to, **artificial intelligence, financial technology, health technology, biotechnology, smart cities, clean technology, the creative sector and the experience economy**.
- The Participants will support and facilitate each other's incoming missions and business programmes and in this regard will help to recommend and organise relevant meetings where possible and appropriate.

- The Participant will support and cooperate with the other Participant in organising investment promotion events that foster bilateral investment between the United Kingdom and the Hong Kong SAR, including but not limited to DIT Hong Kong Fintech Awards, Hong Kong Fintech Week and other signature events and road-shows to be held in the United Kingdom and the Hong Kong SAR.
- Each Participant will provide a programme of support for new-to-market small and medium-sized enterprises seeking to establish a presence in its area.

### **Biotechnology in Hong Kong:**

- The biotechnology industry in Hong Kong is an emerging sector with steady growth.
- It's estimated that Hong Kong has approximately **250-300** biotechnology-related companies, comprising of mainly healthcare-related companies with business on pharmaceuticals, medicinal or healthcare products of traditional Chinese medicine origin, and medical devices and diagnostics. Activities engaged by these companies generally include product research & development, manufacturing, marketing and sales. Amongst them, over 70 companies, some with substantial mainland China business background, are listed in the Hong Kong Stock Exchange and Growth Enterprise Market.
- Because of Hong Kong's strategic geographical location and the huge economic potential of the China market, there is a constant stream of overseas biotechnology companies interested in setting up regional headquarters or offices in Hong Kong to capitalize on the growth of the region.
- **Hong Kong Science and Technology Parks Corporation** (HKSTP) is focusing on biotechnology and artificial intelligence as part of its goal to become a major driver and coordinator of innovation and technology in the city.
- HKSTP will strengthen ties with overseas academic and research bodies and attract investment in the biotech field under its four-year Incu-Bio scheme.
- It will upgrade its facilities, including laboratories and research-related application amenities, to boost research capabilities and provide a one-stop service for biotechnology firms.
- The goal is to turn Hong Kong into a top-notch biotech quality-testing center in the region.
- In March 2018, the **Hong Kong Exchanges and Clearing** (HKEX) signed memoranda of understanding with four leading biotech industry associations to strengthen mutual communication and cooperation, and support listings of biotech firms in Hong Kong. The industry groups are: China Pharmaceutical Innovation and Research Development Association; The BayHelix Group; China HealthCare Investment 50 Forum; and Taiwan's Institute for Biotechnology and Medicine Industry.

- HKEX will conclude its public consultation on proposed new rules to facilitate listings of companies from emerging and innovative sectors, which include pre-profit or pre-revenue biotech firms, and provide a unique capital-raising platform for the industry while ensuring appropriate investor protection.

### **Fintech in Hong Kong:**

- Investment in Hong Kong fintech companies **more than doubled** last year compared to 2016, as Hong Kong government support and their wider acceptance made companies in the sector more attractive to investors. Amid what has been a global surge in interest, Hong Kong-based fintech investment jumped to **US\$545.7 million** in 2017 from US\$215.5 million in 2016 and US\$107.5 million in 2015, according to an Accenture analysis of data from CB Insights.
- The largest fundraising in Hong Kong last year was by **WeLab**, the mobile lending company, which raised **US\$220 million** in November 2017.
- The Hong Kong SAR Government and the UK Government has entered into a **HK-UK FinTech Bridge Agreement** on 20th September 2017 to foster collaboration between the two economies in promoting financial innovation.
- As the second largest financial services location in the UK, **Edinburgh** is an ideal place for many fintech companies to expand due to the size of asset managers, insurance companies and banks located in the city. SDI brought **5 Hong Kong fintech companies** to Edinburgh on 21<sup>st</sup>-22<sup>nd</sup> March 2018 to explore the Edinburgh's fintech eco-system.
- Many fintech companies (with AI focused) are looking to collaborate with Scottish universities with strong AI, data analytics capabilities. Key opportunities for fintech is inward investment, joint R&D with universities and partnering with local fintech service providers.
- **Case Study:** Hong Kong-based crypto-currency R&D company **IOHK** is investing **\$1million** in a research laboratory at The School of Informatics at The University of Edinburgh, which is the first such industry-academic partnership for the study of blockchain in Scotland.

**PRECISION MEDICINE, DATA SECTOR AND AI****Precision Medicine**

- Scotland's world-leading expertise in healthcare and data informatics is the backbone of our emerging expertise in precision medicine.
- Highly competitive eco-system offers unrivalled and direct access to a world-class network of precision medicine resources and is based on a strong legacy of clinical expertise and access to relevant patient populations.
- **£4m** government investment will co-ordinate precision medicine resources and opportunities across Scotland, bring together the findings from individual research projects and improve information sharing in the fight against diseases.
- Current exemplar projects are being run in oncology, irritable bowel syndrome, rheumatoid arthritis and COPD.
- Scotland has great strengths in data, with digital assets and talented people that have attracted companies such as Microsoft, Intel and Amazon. These companies are clustering around our world class universities to collaborate in developing the tools for the new era of data exploration and exploitation.
- Expertise in Scotland includes technologies e.g. evolutionary systems, graph algorithms, formal languages, Meta-Heuristics, evolutionary algorithms, optimisation, Machine Learning, AI for vision, image analysis, AI for Games, Multi agent systems, social robotics, dialogue systems, neurally inspired systems, Computational cognitive science, AI in Computational Biology, Case based reasoning, Metaheuristics/Optimisation
- Industry collaborations in these subject areas have come from SMEs such as [Wallet Services](#) and companies such as [Air-France](#), [KLM](#), [Microsoft](#), [NHS Managed services](#)

**AI**

- Scotland's strengths in data records/informatics, biorepositories, clinical expertise, patient access, genomics (and other 'omics – proteomics, metabolomics) and bioinformatics – and the coordination of these through the Scottish Precision Medicine Ecosystem, makes Scotland a particularly good location for collaborative studies/inward investment
- Many of Scotland's clinical strengths mirror the main disease prevalence in China – e.g. Diabetes; cardiovascular disease and cancer (in particular lung, liver & stomach)
- Diabetes is a real strength – and precedence for major international collaboration in this area with a Scottish: India project announced in July 2017 that uses the Scottish Clinical Care Information – Diabetes Care (SCI-DC) – this provides a sophisticated shared electronic patient record for every individual with Type 2 diabetes in Scotland with continuous data spanning over 20 years.



- A very recent example of Scotland's ability to coordinate health data came in February with the announcement that the Stratified Medicine Scotland Innovation Centre (SMS-IC) was awarded a **£1.7m** grant from Innovate UK to construct a Data Commons for Non-alcoholic Fatty Acid Liver Disease – a condition commonly associated with diabetes. This is generating considerable interest amongst global pharma companies and may lead the way, not only in generating new treatments for NAFLD (and its associated condition NASH), but also enable further Data Commons approaches for other disease conditions e.g. cancer

### **Fintech in Scotland**

- Scotland rapidly establishing itself as significant FinTech Hub building on global reputation for Financial Services including Insurance, Asset Management and Banking underpinned by academic and research expertise.
- Scotland has a workforce with deep expertise in a range of financial subjects (e.g. Insurance, Life, Pensions, Asset Management and Banking) as well as strong technical expertise.
- The ambition is to deliver an integrated FinTech ecosystem which supports, and is supported by other global FinTech centres.
- Collaboration is an important part of the Scottish FinTech ecosystem.
- Outside of London and the South East, Scotland has the most competitive Financial & Business Services industry cluster in the UK.
- **FinTech Scotland** aims to make Scotland one of the five most important centres in the world for fintech. An SE-led public-private industry group which will deliver a nationwide action plan. Will include the development of both a physical FinTech innovation hub to encourage growth and acceleration of FinTech companies.

## INNOVATION AND ACADEMIC/INDUSTRIAL COLLABORATIONS

Scotland has world leading research strengths within its University sector. It has one of the highest concentration of universities in Europe, with **5** Scottish universities ranked in the top 200 according to the 2018 Times Higher Education rankings – that puts them amongst **the top 1% globally**. Our research is changing the world - **86%** of Scottish research submitted to the Research Excellence Framework for 2014 was judged to have ‘outstanding’ or ‘very considerable’ impact. Scotland’s universities produce spin-outs at an incredible rate – in fact, **more companies are formed based on inventions or knowledge developed from university research here than any other part of the UK**. Our universities produce talent that is sought globally, over **50%** of our working population has further education – that’s **more than anywhere else in the UK**.

To ensure the business community in Scotland benefits from our university strengths a network of **8** industry facing Innovation Centers has been established. Each of them is a valuable segment of Scotland’s Innovation Eco-system supporting growth in international markets, and attracting inward investment. The centers are:

1. **Data Lab** enables industry, the public sector and world-class academics to innovate and develop new data science capabilities in a collaborative environment. The core mission is to generate significant economic, social and scientific value from data for Scotland.
2. **CENSIS** is a centre of excellence for Sensor and Imaging Systems (SIS) technologies. CENSIS enables leading industry innovators and world-class university researchers to collaborate at the forefront of market-focused innovation, developing products and services for global markets.
3. **Construction Innovation Centre** - supports Scotland's construction related businesses to innovate, collaborate and grow by matching innovation requirements with business support and academic specialists.
4. **Digital Health Innovation** helps address modern health and care challenges through the development of new ideas for cutting-edge digital health technology and information services. They find smarter, more effective ways of managing and delivering health and care services and the advances in technology present huge opportunities to build more effective, fit-for-purpose, patient-centered health and care services.
5. **Industrial biotechnology Innovation Centre (IB-IC)** supports companies that use biological substances, systems and processes to produce materials, chemicals and energy. At the IB-IC, they work with industry, academia and government to transform Scotland’s competitiveness and capabilities using IB.

6. **Oil & Gas Innovation Centre** fosters, encourages and funds technology innovation. They connect oil and gas companies with new ideas to the world-class research expertise that exists within Scotland's universities.
7. **Scottish Aquaculture Innovation Centre** connects industry with academia, supporting collaboration on key sector issues and opportunities, helping drive growth towards 2030.
8. **Stratified Medicine Innovation Centre** brings together leading experts from industry, the National Health Service (NHS) and academia with the common aim of developing safer, more effective therapies and diagnostic tools for the management of chronic diseases."

### **Scotland's ambition**

- As Scotland's main economic development agency, addressing the imbalance between world class university research and our business innovation performance has been a priority for SE. We want to transform Scotland's innovation performance to equal the best performing nations by 2023, which in turn will lay the foundations for significant growth in Scotland's export and productivity performance.
- Evidence shows it's those countries topping the OECD competitiveness rankings (Finland, Israel and Sweden) which have high levels of innovative business and are more likely to export successfully and generate growth, when compared to non-innovating countries.
- To support innovation, however, we need to help companies understand what it means for them. For example, it is no longer just a few high-tech manufacturing companies which are investing in R&D, technology and product development. Innovation is now ubiquitous, happening in every country and in all sectors.

### **Our vision**

That's what our refreshed strategy set out to achieve – to grow a vibrant, innovative country driven by a company base which is using technology and know-how to innovate and create new products and services that are tailored for changing international markets. By 2023, we want:

- a better performing company base that is investing more in innovation and reaping the benefits in enhanced international sales
  - Scotland's standing increased as an innovation destination, resulting in the attraction and retention of more talent and foreign direct investment
  - more economic impact generated from the exploitation of academic research by Scottish companies; and
  - growth in BERD and innovation activity to the OECD top performers
- The vision is for Scotland to be in the OECD's top quartile for innovation performance by 2023. To do this we will need 5,000 more companies to become innovators and Scotland's business expenditure on R&D to increase by £650 million, nearly double the 2014 figure.***

## SCOTLAND'S INVESTMENT LANDSCAPE

### EQUITY INVESTMENT

Information from SIB commissioned research – full 2017 annual reports published May 2018.

#### Risk Capital Market Report – 2017 up to end Q3

- **Scottish risk capital market continues to show steady growth** – we expect the market to have exceeded £400m of investment into innovative early stage companies in 2017. Total annual investment for 2016: **£336m** and 2015: **£472m**.
- **Companies securing larger investments continues to be a feature of the market** – **5** deals over **£10m** this year compared to a total of **2** deals (Skyscanner **£128m** & Brewdog **£19m**) for 2016.
- Scotland's largest investment of the year so far is BrewDog's **£100m** investment from TSG Consumer Partners (San Fran HQ) in April 2017.

#### UK Benchmarking Report – 2017 up to Q3

- **Continued strong performance of UK market** – most noticeable feature is the small number of exceptionally large deals (outliers above £50m). These deals are attracting increased amounts of international investment.
- **Investment levels increase significantly across the UK** – deal numbers have remained at similar levels from 2016 to 2017, but investment amount has increased substantially. This appears to be largely due to very significant large deals (above £50m), particularly in London.
- The UK has the most active VC market in Europe and Scotland benefits from proximity to London and access to the many international investors who are based in the capital.
- **Scotland stands out as a particularly strong market.** Scotland performing well as the 'next best' region for investment and deal volume after the 'golden triangle'.
- **The 'golden triangle' continues to dominate** – combined, London, South East and East England (the 'golden triangle') accounted for **80%** of equity investment and **70%** of deals in 2016. By Q3 of 2017 the golden triangle had secured **78%** of investment and **70%** of deals.

## **EDINBURGH INTERNATIONAL HOSPITAL MANAGEMENT MOU WITH PUTIAN CITY GOVERNEMENT**

### **Current Status:**

Since November 2016, the University of Edinburgh has worked closely with the HKSE listed company Hua Xia Healthcare to develop opportunities in China's healthcare market, with HX funding a virtual institute that Nick Mackie led as Head of Partnership Strategy working closely with Charles Swainson as Medical Director.

On March 7<sup>th</sup> 2018, the University and HX formally agreed to form a joint venture company, registered in Edinburgh with SPVs in Hong Kong and operational subsidiaries in China (currently have 2 registered companies in Shenzhen).

### **Company name:**

The Edinburgh company was originally registered as 'Future Health Investments (Scotland) Ltd' – the name will be changed to reflect its Edinburgh roots.

The Hong Kong registered companies are:

- Edinburgh Health International Investment and Management Ltd
- Edinburgh International Hospital Management Ltd

In Shenzhen, we have registered:

- Edinburgh International Hospital Management (Shenzhen) Co. Ltd
- Shenzhen Edinburgh Diabetes Research Institute

### **The company's principle business activities are:**

- healthcare service delivery, which can include hospital management, operations, marketing and hospital equipment procurement
- healthcare data services, data collection, storage, analysis and information, technology structures
- training for hospital personnel at all levels
- organise and conduct research
- invest in healthcare services, products, equipment, data management and services

### **The company's strategy is to:**

- bring Edinburgh / Scotland's experience and technology to China, notably the care and management model of chronic disease management (diabetes, hypertension etc)
- develop business through comprehensive cooperation with local hospitals, universities, research institutions and government agencies in areas of training, education, research

- provide expertise to industry which is unique and competitive
- fully capitalise the top-down advantages developed by the company's team to penetrate the market and rapidly build credibility, trust and confidence in China

**The company will pursue business through 3 streams:**

- general consultancy services for hospitals and healthcare institutions
- clinic / hospital management services for 3rd parties
- establish and operate specialist clinics / hospitals

**The Business Opportunity:**

- The company is supporting the establishment of an International Diabetes Centre in Shenzhen People's Hospital.
- The next proposed project is in Fujian Province.
- The company's management seek agree an MoU / Heads of Terms on April 11<sup>th</sup> with Putian City in Fujian Province to establish and operate a hospital in the city plus provide a range of planning and management services for a proposed Mazu Medical City in Meizhou Bay.
- The Mazu Medical City project has attracted investment interest from Foxconn and New Hope Group.
- It is proposed that the agreement could be signed on the margins of the Hong Kong Business Forum on Friday April 13<sup>th</sup>.
- At the Forum, the Scots company would be represented by its 2 shareholders (UoE Senior Vice Principal Charlie Jeffery and HX CEO David Jiang), the company's senior management (Nick Mackie and Charles Swainson) plus 3 senior officials from Putian City Government.
  - Dr David Jiang, CEO Hua Xia Healthcare
  - Nick Mackie
  - Charles Swainson
  - Shen Bolin, male, 54 years old, Member of the Standing Committee of the Putian City Committee of the Communist Party of China
  - Lin Suqiong, female, 54 years old, Director of the State-owned Assets Supervision and Administration Commission of the Putian City People's Government
  - Lin Xiuji, male, 55 years old, Communist Party of China Secretary of the Working Committee of the North Shore Economic Development Zone, Meizhou Bay, Putian

**The MoU:**

- Putian City Government and the University of Edinburgh-Hua Xia Healthcare joint venture company have reached a strategic cooperation framework agreement regarding the construction of Mazu International Health City.
- Putian City Government appoints the company as its specialist consultant, providing guidance on the overall planning and design of the project.
- The company will introduce medical technologies, talent and management teams to establish specialist hospitals, including a diabetes and chronic disease management hospital.
- In addition, the two parties agree to initiate the construction, management and operation of the “Edinburgh International Hospital” in Putian City.
- Under the framework, Putian City Government would pay consultancy fees, provide the building and infrastructure, pay for any refurbishments and hospital equipment plus provide capital to recruit and train personnel, and funding to support the hospital’s establishment period.

**Further Notes on the Putian opportunity:**

- Putian, with 3 million population, is a wealthy city on the Taiwan Strait in eastern China’s Fujian Province.
- It is an export base for the province’s products: shoes, electronics, garments, fruit and vegetables.
- Putian is also the family hometown to 80% of the owners of China’s 11,000 privately invested hospitals.
- The vast majority of the wealthiest locals, however, live elsewhere in China or overseas.
- Putian’s GDP is around £17 billion and economic growth is in double figures.
- Putian has a 158,000 sq m site on its Meizhou Bay area, around 40 km from the main urban area, where it seeks to develop a ‘medical city’ project, comprising specialist hospitals, a drug development centre, medical school, conference centre and facilities for medical and wellbeing tourism.
- This is a £134 million investment. Construction is scheduled over 16 months.
- Putian’s strategy is to attract medical consumers from Taiwan and Mainland China’s eastern seaboard, akin to an Oriental Florida.
- A ferry terminal will be built to serve a cross Straits service with Taiwan.
- Terry Guo, Chairman of Taiwanese electrical components manufacturer Foxconn – maker of iPhones and iPads in Shenzhen – has pledged to invest in the project as has the New Hope Group, Asia’s largest food producer and a shareholder of Hua Xia Healthcare.
- The company is in discussions with the Putian City Government regarding involvement in the Meizhou Bay / Mazu Medical City project, that would focus

on conceptual planning, marketing, management and, in time, introducing medical specialties.

- While this is an attractive opportunity with support from high profile investors, the company also seeks to establish an earlier presence in the main city where a need exists today for additional hospital facilities.
- Putian City is prepared to provide the company with support to establish an international hospital by providing a suitable new building, paying for all renovation / redecoration and equipment plus funding the costs of planning and establishment.
- A key service in this hospital will be an International Diabetes Centre.
- The company also seeks to establish Medical Education, Research and Technology facilities within the international hospital.
- Putian city has seven hospitals that manage patients with endocrine disorders.
- Together, in 2017, they treated 194,111 patients with diabetes. In Scotland, some 275,000 people are on the national diabetes register.

### **The First Minister, University of Edinburgh and China Healthcare:**

- In July 2015, the First Minister witnessed an MoU signing in Shanghai between the Universities of Edinburgh & Dundee and SAMIC, a Chinese healthcare industry alliance.
- From this MoU, the University of Edinburgh and one of SAMHIC's members, Hua Xia Healthcare, formed a close working relationship based on each other's willingness and capacity to develop business streams in China based on education, research and service delivery.
- In November 2016, Hua Xia Healthcare funded a 'virtual institute' to support business development efforts, securing a first project in May 2017 (Shenzhen People's Hospital International Diabetes Centre, which won the China-Scotland best Education-Industry collaboration award in February 2018).
- The 2 partners formed a Joint Venture in March 2018.
- The MoU signing with Putian to establish and operate a hospital is the first concrete project of the new JV.
- There is a direct line between the First Minister's visit in July 2015 and the April 2018 visit.



## BRIEFING FOR THE FIRST MINISTER

### GlobalScot Hall of Fame Induction with Vincent Connor, HONG KONG

FRIDAY 13<sup>TH</sup> APRIL 2017

<b>Key message</b>	<ul style="list-style-type: none"><li>• Acknowledge Vincent as the leading GlobalScot in Hong Kong and recognise the work and commitment he has given to Scottish interests in the region.</li><li>• Delighted to officially welcome Vincent to GlobalScot Hall of Fame.</li></ul>
<b>What</b>	<ul style="list-style-type: none"><li>• 1:1 meeting with an influential GlobalScot formally welcoming him to Hall of Fame.</li><li>• Maximise opportunity to meet with a senior leader in Hong Kong to establish what the Scottish Government, SDI and partners can do to support Scottish companies looking to this market for future direction and demonstrate that Scotland is well positioned to support new areas of business.</li></ul>
<b>Why</b>	<ul style="list-style-type: none"><li>• To inspire other GlobalScot's to continue and enhance their contributions.</li></ul> <p>[REDACTED]</p>
<b>Who</b>	Vincent Connor, Partner and Head of Office, Hong Kong, Pinsent Masons LLP
<b>Where</b>	Green room, KPMG 23 <sup>rd</sup> floor, Hysan Place, 500 Hennessy Rd, Causeway Bay, Hong Kong
<b>When</b>	15:55 – 16:05
<b>Likely themes</b>	<i>Internationalisation, GlobalScot network, Hospitality sector, Young Presidents Organisation.</i>
<b>Media</b>	<i>n/a</i>
<b>Supporting officials</b>	<ul style="list-style-type: none"><li>• [REDACTED] SDI Director Asia Pacific</li><li>• [REDACTED]</li></ul>
<b>Attached documents</b>	Annex A: Summary Page [REDACTED]

## SUMMARY PAGE

### Purpose of meeting:

- An opportunity to meet with an influential GlobalScot to formally welcome him into the Hall of Fame.  
[REDACTED]

### Key Facts:

- GlobalScot is a diverse network of over 600 business leaders, entrepreneurs and executives with a connection to Scotland - and a strong desire to see Scottish businesses succeed locally and in the wider world.
- Established by Scottish Enterprise over 15 years ago (2001) the network has helped transform the face of Scottish business, giving hundreds of emerging and growing companies in Scotland a head-start to compete in a global marketplace.
- The current priorities for utilisation of the network are strategic activity, company growth and new investment – as per the trade and investment strategy for Scotland 2016-2021.
- Time commitment can vary but we typically ask GlobalScots to provide up to 4 pieces of support throughout the financial year, example include hosting an event, meeting with Scottish companies, providing mentoring support, speaking at events, supporting us in engaging our target lists, providing thought leadership content for our web and social media channels, informing government policy and strategy.

### Points for discussion/lines to take:

- The Initiative has come a long way since it began 2001, with an increased number of active GlobalScots and increased number of Scottish companies that the network assists every year.

[REDACTED]

### Scotland's strengths

- Graduate pipeline from **5** of the world's **top 200 universities**.
- Scotland has **28% of the UK's spin-out** companies compared to London's 18%.
- Scotland has more computer science startups than Oxford and Cambridge combined.
- **Edinburgh has the most active tech innovation community outside of London**, closely followed by Glasgow in 4th place (out of 36 countries). (Open Data Institute).
- Scotland **2nd top place** to visit in the world in 2017 (Rough Guide) and Edinburgh voted UK's Top City by Guardian Travel awards **13** consecutive years.
- Operational cost savings of up to **30-40%** compared to London.

## Universities

- More world-class universities than any other country by head of population.
- Every year 19 universities work with over **19,000** different organisations, (10,000 in Scotland), to develop new products and processes.
- **85%** of employers say they are satisfied/very satisfied with work-readiness of our graduates.
- **25,000** European and **31,000** international students.
- Campuses in Singapore, India, Dubai, Malaysia, the USA, and South Korea.
- **86%** of Scottish research judged to have “outstanding” or “very considerable” impact.
- Over **11,000** students a year take part in their universities’ entrepreneurship activities.
- **433 graduate start-ups** active last year with a total turnover of **£41m / HKD454m**. Number of graduate startups increased by **14%** in the last 3 years.

## Inward investment

- EY ranked Scotland as the **most attractive UK location** for FDI, outside London for 5<sup>th</sup> year in a row. **122 FDI projects** in 2016.
- More R&D projects than any other UK region in 2016, including London.
- Scotland’s largest cities (Glasgow, Edinburgh, Aberdeen) in the UK’s top 10 for FDI.
- SDI secured **7839** jobs in Scotland during 2016/17, an increase of 10% on previous year.
- London is an important partner for us. Together, we attract the majority of FDI projects to the UK. Many companies which have their front office in London rely on Scotland and its strong talent pool to deliver middle and back office functions.
- Innovation and investment hubs in London, Brussels and Dublin. Paris and Berlin to follow.

## International trade

- Export Statistics Scotland: **£1bn (3.6%) increase** in total nominal value of international exports (excluding oil and gas) from Scotland – from £27.7bn in 2014 to £28.7bn in 2015. (Goods and services).
- **Economic strategy targets a 50% increase** in the value of international exports between 2010 and 2017.

## Hong Kong’s economy:

- **GDP purchasing power parity: US\$453bn / £322bn / HKD3,570bn**
- **GDP growth rate: 3.5% (2017 est.)**
- **93% of GDP from rapid expansion in services sector: financial services, tourism, trading & logistics, professional services.**

## Inward investment between Hong Kong and Scotland:

- **15** Hong Kong owned enterprises operating at **50** local business sites, employing **930** Scottish staff with total Scottish turnover of **£571m** / HKD6,331m (2017).
- Hong Kong-based crypto-currency R&D specialist **IOHK** is investing in a research laboratory at **University of Edinburgh's** School of Informatics.
- Hong Kong FinTech company **Transwap** has set up a subsidiary in Edinburgh.
- **Three** (owned by **Hutchison 3G**, subsidiary of Cheung Kong Group) approx. **600** staff (**1000+** in 2016), **30+** retail stores and operates back-office function in Glasgow employing **320** (**850+** in 2016). **Feb 2017** outsourced **400+** jobs to **Capita**, recognising high attrition rates.
- **Topsearch International Holdings Ltd** is engaged in printed circuit board manufacturing and has EU marketing office in Ayrshire Innovation Centre.
- HK clothing manufacturer **Fang Brothers** own **Pringle of Scotland** (**12** employees in Hawick, **£4m** / HKD44.3m turnover).
- Aberdeen subsidiary of HK based **Swire Group, Swire Oilfield Services Limited**, provides transportation equipment and services to O&G industry

[REDACTED]

## BRIEFING FOR FIRST MINISTER

### MEETING WITH CHIEF SECRETARY CARRIE LAM

FRIDAY 13<sup>TH</sup> APRIL 2018

<b>Key message</b>	<ul style="list-style-type: none"><li>• The Scottish Government is committed to strengthening relations between Scotland and Hong Kong.</li></ul>
<b>What</b>	<p>A meeting with the Chief Executive of Hong Kong – this builds on their previous meeting in 2015, when Carrie Lam was in her post as Chief Secretary.</p> <p><i>N.B. There have been a couple of recent UK Government Ministerial visits to Hong Kong:</i></p> <ul style="list-style-type: none"><li>• <i>Secretary of State for Scotland, David Mundell, from 12-13 February. He promoted the GREAT Festival of Innovation; underlined UK commitment to Hong Kong; heard from senior representatives of the business community and paid his respects to the fallen at the Sai Wan War Cemetery.</i></li><li>• <i>Secretary of State for International Trade, Liam Fox, provided the opening speech at the GREAT Festival of Innovation in Hong Kong on 21 March.</i></li></ul>
<b>Why</b>	<p>The Chief Secretary will be interested to hear about the First Minister's itinerary in Hong Kong. The suggested aims of this meeting are:</p> <ul style="list-style-type: none"><li>• <b>To provide an overview of your programme in Hong Kong .</b></li><li>• <b>Congratulate Carrie Lam on her election as Chief Executive in March 2017.</b></li><li>• <b>Build on existing high-level relationship between the Scottish and Hong Kong Governments and reinforce your personal commitment to the relationship following your visit in 2015 and meeting with Ms Lam during that visit (while she was still Chief Secretary)</b></li><li>• <b>Showcase progress and priority of gender equality, women in politics and opportunities in education.</b></li><li>• <b>Build a collaborative opportunity around innovation and in particular, data driven innovation.</b></li></ul> <p>[REDACTED]</p>
<b>Who</b>	<b>Chief Executive Carrie Lam</b>
<b>Where</b>	<b>Chief Executive of Hong Kong's Office</b>

<b>When</b>	<b>Friday 13<sup>th</sup> April 17:30 – 18:00</b>
<b>Likely themes</b>	<b>Gender Equality, Innovation</b>
<b>Supporting Officials</b>	[REDACTED]
<b>Attached Documents</b>	Annex A: Summary Page Annex B: Biography Annex C: Gender Equality Annex D: Data Driven Innovation [REDACTED]

## SUMMARY PAGE

The First Minister met with Carrie Lam, when she was Chief Secretary of Hong Kong, during her visit to China in July 2015 and they discussed opportunities for economic collaboration between Hong Kong and Scotland. The meeting focused on Hong Kong's programme of constitutional reform and the shared challenges of in work poverty and meeting the needs of an older population.

### Suggested Discussion Points

- Points to raise
  - Reinforce the FM's **personal commitment** to the relationship between the Scottish Government and the Hong Kong Government
  - Build on previous meeting to showcase progress and priority of **gender equality, women in politics and opportunities in education**
  - Highlight opportunities for collaboration on innovation, especially **data-driven innovation**
- Political engagement
  - FM met then Chief Secretary Carrie Lam on 31<sup>st</sup> July **2015**
  - Mrs Lam was sworn in as Hong Kong's **first female Chief Executive** on 1st July 2017
- Political Context
- **House of Commons debate** in January 2018 on Hong Kong's basic freedoms and autonomy
- Foreign Secretary visit in July 2017 to mark the **20 year anniversary** of Sino-British Joint Declaration
- Innovation and Technology
  - **Current HK Government Priorities**
    - \$500 million **Technology Talent Scheme** to nurture local talent and more job opportunities for young researchers
    - Re-industrialisation and Technology Training Programme (RTTP) to provide subsidised vocational **training in advanced technologies**
    - \$10 billion establishing 2 research clusters in the Hong Kong Science Park: 1 focusing on **healthcare technologies** and 1 on **artificial intelligence and robotics technologies**
    - More **collaboration** between local industry, training providers and international partners to **support the next generation** of innovation and technology talents
    - \$100 million to foster the development of **e-sports industry**



- **Attract multinational companies** to set up offices and R&D units in Hong Kong
- Collaboration between the Smart Industry One Consortium, The Hong Kong Productivity Council (HKPC) and overseas research institutions to facilitate **more efficient information exchange**
- **Scottish Digital Tech Sector**
- Scottish digital tech sector has over **1,500** companies from home-grown companies like **Skyscanner**, and **Fan Duel** to large multinationals like **Oracle**.
- Scotland's Big Data opportunity estimated at **£20bn (178bn CNY)** between 2015-2020.
- Over **1,000** software and digital tech companies. **97k** graduates p/a. **5k** software focussed.
- **170** data sciences companies with combined turnover of **£1.2bn (10.7bn CNY)**.
- **25** of the UK's 112 data science related Masters programmes are in Scotland
- **5** Scottish Universities run dedicated cyber security under & post-grad courses.
- Home to **11** of the UK's **24** postgrad data science courses.
- **80** academics with specific interest in AI and who have formed collaborations.
- **6** AI specific undergrad courses in Edinburgh & Heriot-Watt Universities
- **14** Post-grad AI courses in Edinburgh, Heriot-Watt, St Andrews & Aberdeen Universities.
- **Shared Objectives**
  - Tackling gender inequality
  - **Promoting opportunities for young people**
  - Using innovation and technology to stimulate economic growth

**BIOGRAPHY: CARRIE LAM**

Carrie Lam was elected Chief Executive of Hong Kong on 26 March 2017. She is the first female leader of Hong Kong and pledged to “heal the social divide” and “unite our society to move forward” in her victory speech.

As Chief Executive, she is the head and representative of the Hong Kong Special Administrative Region and Head of the Government of Hong Kong. Her role includes nominating principal officials for appointment by the Central People's Government of the People's Republic of China, conducting foreign relations, appointing judges and other public officers, giving consent to legislation passed by the Legislative Council, and bestowing honours.

Before her appointment as Chief Executive, Carrie Lam acted as Chief Secretary for the Administration (Deputy Head of Government-equivalent) from 1 July 2012. As Chief Secretary, Carrie Lam was responsible for policy co-ordination across the government agenda. She also led on specific policy areas, notably constitutional development, where she was appointed head of a task force charged with preparing a public consultation ahead of elections by universal suffrage in 2017 and 2020. She was also charged with forging a closer and more effective working relationship between the government and Hong Kong's Legislative Council and for drawing up the government legislative programme.

Before she joined the government, Mrs Lam was a career civil servant. Her appointments included time as Director-General of the Hong Kong Economic and Trade Office in London from 2004-2006. She retains a home in the UK and visits regularly in a private capacity.

Capable and effective, Carrie Lam is well-regarded by her peers and by the general public in Hong Kong.

**GENDER EQUALITY****Top lines**

- Equality for women is at the heart of the SG's vision for an equal Scotland.
- It is not acceptable for women to be discriminated against in access to employment or under-represented in senior positions.
- It is not acceptable for women to be subject to violence or abuse in any form.

**Tackling the gender pay gap is a priority**

- The gender pay gap is lower in Scotland than in the UK as a whole.
- The full-time gender pay gap in Scotland (median full-time hourly earnings (excluding overtime) was 6.6% last year, compared to a UK-wide gap of 9.1%.
- We are not complacent, and are taking decisive action to tackle the drivers of the pay gap where we have the power to do so.
- We currently do not have the power to regulate in the private sector.
- However in the public sector we have taken action, including:
  - Requiring listed public authorities in Scotland with more than 20 employees to publish their gender pay gap every 2 years;
  - Requiring listed public authorities in Scotland to publish an equal pay statement every 4 years (under the Equality Act 2010 Scottish Specific Duties).
  - Providing £205,000 to Close the Gap 2017/18 to challenge and change employment practices and workplace cultures to support gender equality and close the pay gap.
- The UK Government's private sector gender pay gap regulations are a welcome step in addressing the systemic pay inequality that women experience.
- However, 250 employee threshold excludes SMEs, which account for the majority of private sector companies, and most third sector bodies in Scotland.
- They also don't go far enough, as there is no obligation for employers to take further action on the findings of their pay analysis.

**We are taking action to ensure women's equality in the workplace**

- We are working with the Equality and Human Rights Commission to tackle pregnancy and maternity discrimination.
- We are creating guidelines for employers to ensure best practice, as well as improving access to guidance for pregnant women and new mothers.
- We have delivered a Returner's programme to assist women to re-enter the workforce following a career break.
- We have approved seven projects with a total value of more than £235,000 to address the under-representation of women in the STEM, finance, security and manufacturing sectors.
- The programme also aims to increase the number of women in senior positions in companies and other organisations.

- We are also funding a project to support black and minority ethnic women back into the workplace.
- Our £500,000 Workplace Equality Fund will deliver employer-led innovative solutions to overcome workforce inequality.

### **Scotland performs better than the UK on women's employment and unemployment Rates**

- Compared to the UK, Scotland has a higher female employment rate (71.3% vs. 70.8%) and a lower female unemployment rate (3.6% vs. 4.4%).
- Modern Apprenticeship participation has improved.
- In 2016/17 40% (10,440 of 26,262 total) of MA starts were women compared to 27% (2,857 of 10,579 total) in 2008/9.

### **We are taking decisive action to ensure women are represented in senior and decision making roles, including in the boardroom**

- In 2016 59% of those appointed to public boards were women.
- The Scottish Government's Partnership for Change (PfC) was launched in June 2015.
- This encourages public bodies, third sector organisations and companies from to commit to work towards 50/50 gender balance by 2020.
- The Partnership currently has 217 signatories.
- The the Gender Representation on Public Boards (Scotland) Bill will help us improve this situation further.
- At 1 February 2018, 34 (44.16%) of regulated public boards are balanced, or as balanced as is possible. [NB these figures can change rapidly and so should be treated with some caution].

### **Centenary of Women's Suffrage**

- 2018 marks 100 years since some women were given the right to vote and stand for parliament.
- We have given £500,000 to support projects aimed at celebrating and commemorating the centenary and improving women's representation in politics.
- This funding includes support for Glasgow Women's Library's programme of activity to mark the suffrage centenary.

### **The National Advisory Council on Women and Girls**

- The Advisory Council on Women and Girls, with Louise Macdonald CEO of Young Scot as chair, will play a key leadership role in:
  - raising awareness as a nation of gender inequality and the wide range of related issues experienced by women and girls in Scotland today.
  - acting as a champion for positive progress and policies, and to provide effective challenge;
  - being a catalyst for change where progress simply isn't good enough.

## DATA DRIVEN INNOVATION

- Scottish digital tech sector has over **1,500** companies from home-grown companies like **Skyscanner**, and **Fan Duel** to large multinationals like **Oracle**.
- Scotland's Big Data opportunity est. at **£20bn (178bn CNY)** between 2015-20.
- Over **1,000** software and digital tech companies. **97k** graduates p/a. **5k** software focussed.
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## TALENT

- **25** of the UK's 112 data science related Masters programmes are in Scotland
- **5** Scottish Universities run dedicated cyber security under & post-grad courses.
- Home to **11** of the UK's **24** postgrad data science courses.
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## COLLABORATION

- **Edinburgh School of Informatics:**
  - **12<sup>th</sup>** of 800 **in the world** and **1st** in **UK based** on 3\* and 4\* research.
- **The Edinburgh Centre for Robotics:**
  - **30 world leading** investigators from **12** cross disciplinary research groups and institutes.
- **The Artificial Intelligence Research Group** (St Andrews):
  - Developed unique technology to tackle decision-making and optimisation problems.
- **The Systems Research Group (SRG)** (University of St Andrews):
  - At forefront of cloud computing research.
- **The Scottish Informatics and Computer Science Alliance** (SICSA):
  - Research pool of **14** Scottish universities.
- **Cyber-Physical Systems:**
  - Investigation of physically embedded systems, human-robot interaction
- **Data Science:**
  - SICSA's Data Science activities helping to establish a leading portfolio of data science research, enterprise & innovation to support scientists&industry in Scotland and beyond
- **Human-Computer Interaction**
  - considers new modalities of interacting and accessing information,
- **Networking and Systems; Scotland's universities**
  - Wealth of combined expertise in experimental networked and parallel systems research.

- **Theory, Modeling and Computation; integrates previous SICSA Research Themes in Complex Systems Engineering and Modeling and Abstraction. Scotland is internationally prominent in the areas centered around Theoretical Computer Science, Programming Languages, AI, Logic and Mathematics.**
- **The Data Lab:**
  - Industry-led collaboration, partnership with SICSA. Hubs Aberdeen, Edinburgh & Glasgow.
  - Works with FS companies inc. **Standard Life, AAM, Clydesdale Bank, Avaloq and HSBC.**
- **Edinburgh City Deal:**
  - Data science, robotics, financial services, fintech and digital sectors
  - Aims to make Edinburgh Europe's 'data capital', through Data Driven Innovation.
  - Over 10 years, the University and partners will train **100k** people in application of data.
- **Bayes Centre for Data Science & Technology:**
  - Opening summer 2018 will be a co-creation hub housing both University of Edinburgh data teams and industry partners.
- **Cyber security:**
  - **6** Security Operations Centres operate in Scotland supported by global companies inc. **Dell Secureworks, ATOS, RBS and Tesco Bank.**
- **Blockchain & Universities**
  - Edinburgh and Stirling University (Dr Andrea Bracciali) have active Blockchain research projects.
  - University of Edinburgh School of Informatics hired Chair in Cyber Security and Privacy, blockchain specialist Aggelos Kiayias.
  - Blockchain Technology Lab launching within the UoE School of Informatics.

## **SCOTTISH DATA CASE STUDIES**

- Edinburgh HQ'd **Sainsbury's Bank** initiated data science project to better understand customer loyalty and spending motivations.
- 2017 **Merkle**, acquired **Aquila Insight**, one of the largest independent data analytics organisations in the UK (HQ'd in Edinburgh and London).
- **Huawei** launched data management lab with **University of Edinburgh**
- **Intel** sees data centre/cloud servers as a **prime market** for its chip. Recently established a **chip architecture team in Edinburgh** (within **Edinburgh Uni**).
- **Heriot Watt** students developed, Alana, a socialbot.
- **Amazon's Edinburgh team** harness latest technology and computer science to build features that help customers discover the products they want.
- **CGI's** Open Digital Services Centre is a centre of excellence for open technologies across the UK, Blockchain orgs in Scotland include Wallet Services, Maidsafe, Flockchain, Scotcoin, Cloudsoft.

[REDACTED]

## **CHINA MARKET OVERVIEW**

- One of the world's biggest data producers, over **700m internet users** and **1.3bn mobile phone users** - more than any other country on both measures.
- China's three internet giants, **Alibaba, Baidu, Tencent** are building their business models, operations and cultures around big data and AI.
- Alibaba's cloud division is focussed on using AI in areas such as shopping and healthcare.
- Baidu has an AI research lab in Silicon Valley and is exploring areas like driverless cars.
- The government focus on big data has led to companies investing in big data capabilities. Plan encourages universities and institutions to offer big data courses and internships.
- **Chinese President** visited the **Data Science Institute, Imperial College London** October 2015.

## **AI**

- 2017 - China's State Council released a development plan for its AI industry.
- Plan ambition for total market size of AI in China to exceed RMB 1tn (US\$150bn) by 2020. By 2030 10 times this figure.
- 592 AI companies in China, 23.3% of global market, US has 1078 AI companies.
- Vast population and diverse industry mix make China one of the leading global hubs of AI development but it lags behind the US and UK in terms of fundamental research that advances the field of AI.
- Focus is on need to build innovation capacity. US and UK currently producing more influential AI research, US produces more competitive AI startups.
- 50% of US data scientists more than 10 years experience, while 40% in China have less than 5.
- China has less than 30 university research labs focused on AI.

## **New Cybersecurity and Privacy Law in China**

- 2017 Chinese Government passed the Cybersecurity and Privacy Law highlighting importance of building trust in the security and use of sensitive personal data. Companies are required to store all data in China and pass security reviews.
- States will be permitted to govern and monitor their own cyberspace, controlling incoming and outgoing data flows.

Companies located outside of China supplying services on a cross-border basis will be severely affected, as they must depend on access to data from their customers in China

[REDACTED]