Modernity and Globalization

How new paradigms of connectivity and diversity define a new era of creative disruptions

Andrew K P Leung, SBS, FRSA
International and Independent China Strategist

University of Hong Kong, Tuesday 22 November, 2016
Disclaimer

All materials contained in this presentation, including any analysis, comments, remarks, opinions and pointers are for information, debate and discussions ONLY. No warranty of their accuracy, completeness, timeliness or reliability is implied.

Any reliance on these materials in any way assumes total exemption of any liability whatsoever of Andrew Leung International Consultants Limited and Andrew K P Leung including all their current and future Affiliates, Associates or Assigns.
Modernity defined by paradigm shifts

- Globalisation has narrowed time and space
- Consumerism is all
- The impact of ICT on social life
- Transformation of the self ('pick 'n' mix')

Postmodernism:

- Search for truth
  - Modern age has lost the enlightenment

- Fragmentation of social life
  - People less likely to follow rigid ideology
  - Greater pluralism in modern life
    - No absolutes
    - Culture and structures are fragmented
      - Less predictable

Confusion/lack of structure/incessant choice
YOU CREATE WHO YOU WANT TO BE
The Age of the Fourth Industrial Revolution

1. Industrial revolution follows introduction of water- and steam-powered mechanical manufacturing

2. Industrial revolution follows introduction of electrically-powered mass production based on the division of labour

3. Industrial revolution uses electronics and IT to achieve further automation of manufacturing

4. Industrial revolution based on Cyber-Physical Systems
The Age of “Connectography"
**Connected eco-cities of the Future**

*BBC News Technology*, 20 August, 2013, Jane Wakefield

- **Greenification** (carbon-neutral transportation, air quality, green spaces)

- **Internet of Things** – Network of Sensors (Crime prevention analytics (Portland, Oregon), water databases (California), smart public transport system (Zhenjiang, China), City Nerve Centre (Rio de Janeiro, Brazil))

- **Open-source (Crowd Sourcing)** design and stakeholding

- **Songdo, South Korea** ($35b project 2005-15) *Ubiquitous U-City* with sensors and teleconferencing linking offices, schools and homes)

- **Masdar, Abu Dhabi, UAE**, carbon free solar-power and wind farms, carbon-free driverless pod-cars, digital water supply and waste treatment
• A society of Ubiquitous Information Networking for every citizen – Science and Technology in China: Roadmap to 2050, Chinese Academy of Sciences, 2010

• Super-high speed Internet of Things

• Mobile technology – Uber, Apps for everyday life – public info on city budgets, hospital performance, traffic congestion, tube operations, rain schedules and bicycle-hire scheme locations

Libelium Smart World
DESIGNING GREEN CITIES
12 GUIDELINES TO CREATING HAPPIER, HEALTHIER, AND MORE SUSTAINABLE CITIES

1. URBAN GROWTH BOUNDARY
Every city should have an urban growth boundary to prevent sprawl, encourage infill development, and preserve land resources.

2. TRANSIT-ORIENTED DEVELOPMENT
Cities should match transit capacity to population density. This provides better access to public transit and decreases car use. We recommend that areas near major transit stations have a FAR (Floor area ratio) that is at least 50% higher than the average of the district.

3. MIXED-USE
The intermingling of commercial and residential uses guarantees residents access to amenities. We recommend that all residents should be at least within 500-meter radius of building entrances and that job-resident ratios should be between 0.5 and 0.7 over every commuting district.

4. SMALL BLOCKS
Smaller blocks create a dense mesh of narrower streets and paths that are more pedestrian-friendly. We recommend that blocks should be less than or equal to 2 hectares and 70% of the blocks should comply with this standard.

5. PUBLIC GREEN SPACE
Attractive public spaces can bring economic vitality to any city space. We recommend that publicly accessible and usable green space should comprise 20-40% of the construction areas. All residences should be within 500 meters of public space.

6. NON-MOTORIZED TRANSIT
The most attractive cities in the world emphasize the pedestrian environment at a human scale. Walking and biking require less land and energy use than any other type of transportation. We recommend that there be connected biking and walking paths of at least 10 km per square kilometer.

7. PUBLIC TRANSIT
People will choose not to drive as often if public transit is a first-class option. We recommend that all new developments must be within a 500-meter radius of a bus or rapid transit station.

8. CAR CONTROL
Car control is essential to make streets safer for children and the elderly, alleviate costly congestion and pollution, and rejuvenate street life. We recommend that every city should have a strategy to cap car use and limit parking where high-quality transit exists.

9. GREEN BUILDINGS
Buildings account for about 25% of China's energy consumption and carbon emissions. We recommend that at least 70% of buildings should be MOHURD One-Star, 20-40% of buildings should be MOHURD Two-Star, and 5-15% of buildings should be MOHURD Three-Star within any development.

10. RENEWABLE AND DISTRICT ENERGY
District energy can result in a 30-50% reduction in primary energy consumption. Renewable energy is also falling rapidly in cost and increasing in efficiency. We recommend that every project analyzes the potential for district energy and that renewable energy generation account for 5-15% of residential energy use and 2.5% of commercial energy use.

11. WASTE
For waste management to be sustainable, a significant amount of waste must be diverted from landfills. We recommend that all buildings have a recycling system and that at least 30-50% of waste is composted and 35-50% is recycled or re-used.

12. WATER
We recommend that all buildings have 100% adoption of water-saving appliances, and green spaces surrounding buildings must adopt low water-use plants. All water consumption should also be metered and at least 20-30% of water supply must be recycled from either wastewater or rainwater.
Urban Nexus - Siemens Green City Index & Smart Cities Wheel

The Smart Cities Wheel by Boyd Cohen, PhD
Everything is connected

- Vehicle, asset, person & pet monitoring & controlling
- Agriculture automation
- Energy consumption
- Security & surveillance
- Building management
- Embedded Mobile
- M2M & wireless sensor network
- Everyday things
- Smart homes & cities
- Telemedicine & healthcare
Bloomberg (19 February, 2014), China spent more on smart grids than the U.S. for the first time in 2013, with $4.3 billion invested, accounting for almost a third of the world’s total.

**Local smart grid**

**Smart grids to scale up natural energies**
Digital globalization: The new era of global flows
Online platforms larger than biggest countries

The biggest online platforms have user bases on par with the populations of the world’s biggest countries

<table>
<thead>
<tr>
<th>Platform</th>
<th>Active Users (Online Platforms)</th>
<th>Active Users (Countries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>1,590 Million</td>
<td>1,372 Million</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td>1,314 Million</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YouTube</td>
<td>1,000 Million</td>
<td>1,000 Million</td>
</tr>
<tr>
<td>WhatsApp</td>
<td>1,000 Million</td>
<td></td>
</tr>
<tr>
<td>WeChat</td>
<td>650 Million</td>
<td></td>
</tr>
<tr>
<td>Alibaba</td>
<td>407 Million</td>
<td></td>
</tr>
<tr>
<td>Instagram</td>
<td>400 Million</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>321 Million</td>
<td></td>
</tr>
<tr>
<td>Twitter</td>
<td>320 Million</td>
<td></td>
</tr>
<tr>
<td>Skype</td>
<td>300 Million</td>
<td></td>
</tr>
<tr>
<td>Amazon</td>
<td>300 Million</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>256 Million</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>205 Million</td>
<td></td>
</tr>
</tbody>
</table>

1 4Q15 or latest available.
2 2015 population.

SOURCE: Facebook; Twitter; Alibaba; Fortune; Statista; Population Reference Bureau; McKinsey Global Institute analysis
Global e-tailing and e-commerce

2013 Key B2C E-commerce Data of Goods and Services at a Glance

Top 10 e-commerce countries in turnover (USD billion):

- USA: $419.0
- China: $328.4
- UK: $142.3
- Japan: $136.7
- Germany: $84.2
- France: $67.8
- Australia: $35.7
- Canada: $23.9
- Russia: $20.5
- S. Korea: $20.2

Asia-Pacific: $567.3 bn (+44.6%)
North America: $452.4 bn (+10.1%)
Europe: $482.3 bn (+17.1%)
Latin America: $33.2 bn (+21.5%)
MENA: $14.7 bn (+32.7%)

Global: $1,552.0 bn (+23.6%)
Total B2C e-sales 2013 of goods and services

Cross-border B2C E-commerce:
- Most popular countries:
  - USA: 45%
  - UK: 37%
  - China / HK: 26%
  - Canada: 18%
  - Australia: 16%
  - Germany: 14%

"94 million consumers buy cross-border and this number is expected to grow in 2014."

Estimated share of online goods in total retail of goods: 4.2%

Share of Internet users accessing the web through mobile devices: 73.4%

"1,878 million estimated social media users"
By 2020, some 940 million online shoppers are expected to spend almost $1 trillion on cross-border e-commerce transactions.

Global B2C e-commerce transaction volume
$ trillion

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>15</th>
<th>16E</th>
<th>17E</th>
<th>18E</th>
<th>19E</th>
<th>2020E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-border % of total</td>
<td>15</td>
<td>16</td>
<td>18</td>
<td>21</td>
<td>24</td>
<td>27</td>
<td>29</td>
</tr>
</tbody>
</table>

Global B2C e-commerce shoppers
Billion

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>15</th>
<th>16E</th>
<th>17E</th>
<th>18E</th>
<th>19E</th>
<th>2020E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-border % of total</td>
<td>23</td>
<td>25</td>
<td>28</td>
<td>33</td>
<td>37</td>
<td>42</td>
<td>45</td>
</tr>
</tbody>
</table>

NOTE: Numbers may not sum due to rounding.

SOURCE: AliResearch; McKinsey Global Institute analysis
Globally-connected individuals

Individuals are participating in globalization, and 914 million have cross-border social media connections.

- Social networking users with at least one foreign connection: 914 million
- International travelers: 429 million
- Cross-border e-commerce shoppers: 361 million
- People living outside home country: 244 million
- Cross-border online workers: 44 million
- Cross-border online students: 13 million
- Students studying abroad: 5 million

NOTE: Numbers adjusted to account for overlap between platforms and for individuals making multiple international trips in the same year.

SOURCE: Facebook; AliResearch; US Department of Commerce; OECD; World Bank; McKinsey Global Institute analysis
Digitization is transforming business models in ways that enable more cross-border activity

<table>
<thead>
<tr>
<th>Cross-border implications of digitization</th>
<th>Flow type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Remote monitoring</strong></td>
<td>Data</td>
</tr>
<tr>
<td>Remote tracking</td>
<td>![Symbol]</td>
</tr>
<tr>
<td>Remote maintenance</td>
<td>![Symbol]</td>
</tr>
<tr>
<td><strong>Supply-chain management</strong></td>
<td>Goods</td>
</tr>
<tr>
<td>Remote inventory management</td>
<td>![Symbol]</td>
</tr>
<tr>
<td>Supplier management</td>
<td>![Symbol]</td>
</tr>
<tr>
<td><strong>Access to global markets</strong></td>
<td>Services</td>
</tr>
<tr>
<td>Cross-border access to customers</td>
<td>![Symbol]</td>
</tr>
<tr>
<td>Cross-border access to labor</td>
<td>![Symbol]</td>
</tr>
<tr>
<td>Cross-border access to finance</td>
<td>![Symbol]</td>
</tr>
<tr>
<td><strong>Business operations and strategy</strong></td>
<td>Finance</td>
</tr>
<tr>
<td>Centralized back-office operations</td>
<td>![Symbol]</td>
</tr>
<tr>
<td>Cross-border digital payments</td>
<td>![Symbol]</td>
</tr>
<tr>
<td>Real-time communications and collaboration</td>
<td>![Symbol]</td>
</tr>
<tr>
<td>Data sharing and analytics-driven decision making</td>
<td>![Symbol]</td>
</tr>
</tbody>
</table>

SOURCE: McKinsey Global Institute analysis
Distributed Ledger – Blockchain

Every Hour in FinTech...

- 16 people invest with Betterment
- $757,000 is loaned by Lending Club
- $787,000 is transferred out by Xoom
- $28.43 Million processed by PayPal
- $4.8m of invoice volume is handled by Zuora
- $60k+ is pledged to Kickstarter projects
- 9,000+ P2P money transfers are executed via Venmo
- $37k is loaned to small businesses by PayPal Credit
- 4450 US auto insurance quotes are given online
- 5000+ transactions are executed using BitCoin

Blockchain in Financial Services

- Dozens of Players
- Inter Industry Intermediaries
- Hundreds of Processes
- IT & Business Reengineering
- Thousands of Use Cases
- Millions of businesses
- B2B Services
- Facing
- Billions of users
- Increasing evolution complexity & delivery timeframe

No reproduction without consent
From Route 66 Ventures
### Distributed Ledger non-financial applications

#### Non-Financial Use Cases

<table>
<thead>
<tr>
<th>Digital Content/Documents, Storage &amp; Delivery</th>
<th>Authentication &amp; Authorization</th>
<th>Digital Identity</th>
<th>Marketplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>BitProof, Blockca十二, Ascribe, ArtPlus, Chainy.Link, Stamper, Blocktech (Alexandria), Bisantynum, Blockparti, The Rudimental, BlockCDN</td>
<td>The Real McCoy, Degree of Trust, Everpass, BlockVerify,</td>
<td>Sho Card, Uniquid, Onename, Trustatom</td>
<td>Providing premium rights &amp; brand based coins: MyPowers</td>
</tr>
</tbody>
</table>

#### Smart Contracts
- Otonomos, Mirror, Symbiont, New system Technologies

#### Real Estate
- Factom

#### Diamonds
- Everledger

#### Gold & Silver
- BitShares, Real Asset Co., DigitalTangible (Serica), Bit Reserve

#### Reviews/Endorsement
- TRST.im, Asimov (recruitment services), The World Table

#### Blockchain in IoT
- Filament, Chimera IoT, ePlug

#### App Development
- Proof of ownership for modules in app development: Assembly

#### Network Infrastructure & APIs
- Ethereum, Eris, Codius, NXT, Namecoin, Colored Coins, Hello Block, Counterparty, Mastercoin, Corona, Chromaway, BlockCypher

#### Other
- Prediction platform: Augur
- Election Voting: Follow My Vote
- Patient Records management: BitHealth

### Financial Use Cases

<table>
<thead>
<tr>
<th>Currency Exchange &amp; Remittance</th>
<th>P2P Transfers</th>
<th>Ride Sharing</th>
<th>Data Storage</th>
<th>Trading Platforms</th>
<th>Gaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coinbase (Wallet), BitPesa, Billion, Ripple, Stellar, Kraken, Fundrs.org, MeXBt, CryptoSigma</td>
<td>BTC Jam, Codius, BitBond, BitnPlay (Donation), DeBuNe (SME’s B2B transactions)</td>
<td>La’2002</td>
<td>Storj.io, Peernova</td>
<td>equityBits, Spritzle, Secure Assets, Coins-e, DXMarkets, MUNA, Kraken, BitShares</td>
<td>PlayCoin, Play(on DACx platform), Deckbound</td>
</tr>
</tbody>
</table>
How banks will struggle to survive

How retail banks are being displaced, diminished and disintermediated

Displaced

$B

Visibility

Touchpoints

Point of sale

Disintermediated

Digital wallet automatically chooses best card based on rate, rewards or cashback.

Business model under pressure as banks are relegated to utilities as switching frequency increases.

The core competency of the bank is challenged by the arrival of a new technology.

Day to day interactions move from bank owned interfaces to startups who offer a better experience or price.

New norms in banking

We see more than 30 areas emerging as new norms in banking.

Key fintech trends

- Next-generation personal financial management
- Peer-to-peer lending and investment
- New digital lending
- Aggregator comparison engine
- Mobile payments
- International remittances
- Mobile point-of-sale devices
- Other payment processing
- One-stop shop for businesses
- Peer-to-peer corporate lending and investment
- Next-generation lending to small and midsize enterprises
- Digital cash management
- Robo-advisory
- Social investing
- Crowdfunding
- Investment across regions engine
- Blockchain
- Application programming interface ecosystem
- Payment infrastructure
- Big data base risk assessment
- Anti-money laundering and know your customer
- Artificial intelligence and machine learning
- Cybersecurity
- Telematics
- Social integration
- IoT and connected devices
- Prevention
- Next-generation trade finance
- Trading
- Next-generation collateral management
- Trade analytics
China Dream – Renaissance

Strong China
Civilized China
Harmonious China
Beautiful China

Robert Lawrence Kuhn,
New York Times, 4.6.13
Centuries of national humiliation
“Unstable, Unbalanced, Uncoordinated, Unsustainable”

Unbalanced, Unstable, Uncoordinated, Unsustainable

Rising social unrests

Worker’s rights

Aging profile

Middle-income trap

Energy security

Territorial discord
Sense of regime crisis
Changing of the guards

Waxing and waning
Top three countries by economic dominance; % share* of global economic power

<table>
<thead>
<tr>
<th>Year</th>
<th>1870</th>
<th>1973</th>
<th>2010</th>
<th>2030 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.K.</td>
<td>16.4</td>
<td>18.6</td>
<td>13.3</td>
<td>18.0</td>
</tr>
<tr>
<td>Japan</td>
<td>9.3</td>
<td>8.0</td>
<td>12.3</td>
<td>10.1</td>
</tr>
</tbody>
</table>

Source: Arvind Subramanian

*Weighted by share of world GDP, trade and net capital exports

World’s top 10 economies in 2050 at market exchange rates, nominal GDP; in trillions of U.S. dollars

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>U.S.</td>
<td>China</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>U.S.</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>India</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>Indonesia</td>
</tr>
<tr>
<td>5</td>
<td>U.K.</td>
<td>Japan</td>
</tr>
<tr>
<td>6</td>
<td>France</td>
<td>Germany</td>
</tr>
<tr>
<td>7</td>
<td>Brazil</td>
<td>Brazil</td>
</tr>
<tr>
<td>8</td>
<td>Italy</td>
<td>Mexico</td>
</tr>
<tr>
<td>9</td>
<td>India</td>
<td>U.K.</td>
</tr>
<tr>
<td>10</td>
<td>Russia</td>
<td>France</td>
</tr>
</tbody>
</table>

Source: The Economist Intelligence Unit
Global connectivity of the China Dream

**XI JINPING’S ‘CHINA DREAM’**

- **STABLE**
  - Consistent policies
- **BEAUTIFUL**
  - Clean air, water and land
- **CIVILISED**
  - Equal opportunity, one law for all
- **BOUNTFUL**
  - Rising living standards
- **HARMONIOUS**
  - Goodwill between classes, ethnic groups
- **CREATIVE**
  - Leading in art and science
- **STRONG**
  - Economy, government, defense

---

**China’s outward FDI in machinery manufacturing reached **USD12 billion** in the first half of 2016, a YoY increase of 4.4 times, accounting for nearly 70% of the outward FDI of the manufacturing industry**.

**China’s outward FDI reached **USD99 billion** in the first half of 2016, a YoY increase of more than 50%**.

**China’s outward FDI is likely to exceed **USD170 billion** for the whole year, another historical high**.

**China’s outbound M&A announced in the first half of 2016 had surged to **USD135.5 billion**, a YoY increase of **2.2 times** YoY**.

**MOFCOM’s 13th Five-Year Plan for Commercial Development puts forward that accumulated foreign investment is planned to reach about **USD720 billion** by 2020**.

**Over 70 countries and organizations have expressed their support and participation in the “One Belt, One Road” initiative and China has signed Intergovernmental cooperation agreements with 34 countries**.

Source: Adapted from Robert Lawrence Kuhn
Correcting the Lewis Curve Turning Point

China Is Still Working

China’s growth slows...

but labor markets remain tight.

reflecting a shrinking number of new workers

Population aged 15-19, in millions, estimates

A ratio higher than 1 indicates excess demand for workers

Sources: CEIC; National Bureau of Statistics; Ministry of Human Resources and Social Security; United Nations

1-2m extra births a year – child services scramble to cope
Up the value chain

Chart 1: Share in world hitech manufacturing value added

China shifts from rich-country consumers to poor-country producers

Workshop of the world
Exports of technology and telecoms goods, $bn

China

<table>
<thead>
<tr>
<th>Year</th>
<th>US</th>
<th>EU</th>
<th>Japan</th>
<th>EU-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>150</td>
<td>100</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>2005</td>
<td>200</td>
<td>150</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: OECD
Transformative 13th Five Year Plan 2016-2020

China’s New Five Year Plan
Realising the China Dream – 2020 Goals
Growth | Innovation | Sustainability

Infrastructure
30,000km of high-speed rail covering >80% of major cities
60% Urbanisation ratio of permanent residents
30,000km of highways built or upgraded
New airport in Beijing

Environment
50+ new civil airports
5 million new energy vehicles manufactured and sold
Total farmland maintained at 1.865 billion mu = 1.24 million km²
RMB 6-10 trillion invested in environmental initiatives
PM10 (Particulate matter) air quality indicators to be replaced with PM2.5
> 32.56 million mu = 21.7 thousand km² of new construction land every year

Financial services
Increased focus on “green” finance and financial innovation
Further opening up of financial markets
Further internationalisation of RMB
Significant financial market reforms

Health
Two-child policy fully implemented
At least 2.5 registered practitioners for every 1,000 people
90% population to take part in the basic pension fund program
Life expectancy increased by an average of one year

Social & economic development
+50 million urban jobs created
Added value of strategic new industries to reach 15% of GDP
GDP over RMB 92.7 trillion by 2020, annual growth rate +6.6%
China’s Manufacturing Strategy

- To be *leading manufacturing giant by 2049* (100th anniversary of PRC)
- Marrying *manufacturing and information technology*
- Five Principles - *innovation, quality, green development, optimizing structure, and talent.*
- Milestones - *2025 and 2035*
- To start with national *manufacturing innovation centres, intelligent manufacturing, innovative high-end equipment, core electronic devices, high-end universal chips, numerical control machines and large airplanes.*
China's innovative disruptions

Ranking of country shows the most promise for disruptive breakthroughs that will have a global impact

<table>
<thead>
<tr>
<th>Company</th>
<th>Core Business</th>
<th>Mobility Play (select)</th>
<th>Visions in Mobility and Beyond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baidu</td>
<td>Search</td>
<td>Mapping, navigation and telematics ecosystem, Investment in Uber, Autonomous car project in collaboration with BMW</td>
<td>Location-based O2O aftermarket services, Mobility services integrated with map service, Smart vehicles with Baidu's artificial intelligence capabilities</td>
</tr>
<tr>
<td>Alibaba</td>
<td>E-commerce</td>
<td>Ali Auto Division, Tmall auto e-commerce, SAIC partnership, Yun OS, Investment in Didi Chuxing</td>
<td>In-car connectivity, Full range auto e-commerce platform, O2O aftermarket services</td>
</tr>
<tr>
<td>Tencent</td>
<td>Social</td>
<td>Chelian and Lubao telematics systems, EV project with Foxconn and Harmony Auto, Investment in Didi Chuxing and BluAuto</td>
<td>In-car connectivity integrated with WeChat, Virtual and augmented reality</td>
</tr>
<tr>
<td>Xiaomi</td>
<td>Smart devices</td>
<td>Ninebot Mini E-scooter</td>
<td>Affordable, personal, electric and connected mobility device and gadgets</td>
</tr>
<tr>
<td>LeEco</td>
<td>Content</td>
<td>Investment in Yidao, Atieva, Infotainment content ecosystem, Partnership with Faraday Future, Aston Martin and BAIC</td>
<td>Connected lifestyle services and IoV technologies integrated with bespoke mobility service</td>
</tr>
</tbody>
</table>

Source: KPMG Technology Innovation Survey 2013
81,000 km (50,000 miles) high-speed rail to be built in 65 countries. Potential investment estimated at $1.4 trillion = 12 x Marshal Plan ($120b in today’s prices)
... with geopolitical implications
China contributes $40 billion to set up a Silk Road infrastructure fund to boost connectivity across Asia, through building roads, railways, ports and airports across Central Asia and South Asia.

To focus on China's Silk Road Economic Belt and the 21st Century Maritime Silk Road initiative.

To be "open" and welcome investors from Asia and elsewhere.
.... the Asian Infrastructure Investment Bank (AIIB)

AIIB - 57 Founding Member Countries including key US allies, $50b paid-in capital, $100b authorized capital

A NEW DRIVER OF ASIAN GROWTH

Envoys from regional economies signed a memorandum of understanding in Beijing on Friday regarding the establishment of the Asian Infrastructure Investment Bank. The bank, first proposed by China, will allow stakeholders to target regional development and meet the growing investment and project-funding demands of Asia.

- **Southeast Asian nations**
  - Brunei Darussalam
  - Cambodia
  - Laos
  - Malaysia
  - Myanmar
  - Singapore
  - Thailand
  - The Philippines
  - Vietnam

- **South Asia nations**
  - Bangladesh
  - India
  - Nepal
  - Pakistan
  - Sri Lanka

- **Northeast Asia nations**
  - China
  - Mongolia

- **Central Asia**
  - Kazakhstan
  - Uzbekistan

- **The Middle East**
  - Kuwait
  - Oman
  - Qatar

**$8 trillion**
The amount Asian countries will need for infrastructure investment in the next decade to maintain current economic growth rates, according to the Asian Development Bank.

**$50 billion**
The estimated preliminary capital put up by AIIB stakeholders.

• **World Bank president** reserved for an American
• **IMF head** for an European
• **ADB** – Japan’s voting power 2X China’s
• Bretton Woods institutions follow **Washington Consensus** – full privatization and liberalization of markets, exchange rate, interest rates, trade and investment, tight budget – Not working for most developing countries
and the New Development Bank (BRICS Bank)

- Representing 41.4% (3 b) world population, 25% of world land mass and GDP
- HQ in Shanghai; African regional centre in Johannesburg
- Inaugural President from India
- Inaugural Chairman of B of Directors from Brazil
- Inaugural Chairman of B of Governors from Russia
- No veto power for any Member
- No increase in any Member’s share without other 4 Members agreeing
- Non-BRICS country can join but BRICS share > 55%
- Authorized lending up to $34 b p.a., to start in 2016
Plus an alternative to Panama Canal?

- Project now mired in opposition and scepticism but no official decision to abandon it

- Nicaragua's Congress granted Wang Jing's Cayman Islands-registered HKND company a 50-year concession to develop a 286-km (178-mile) canal connecting the Caribbean with the Pacific via Lake Nicaragua, at a cost of $40 billion, to be completed in 6 years.

- Three times longer than Panama and can accommodate the largest container vessels, those Shanghai’s Linyungang can accommodate as the world’s deepest container port.

- Likely partner – China Railway Construction

- Connects China’s maritime interests to the Americas
The Paris climate agreement: key points
The historic pact, approved by 195 countries, will take effect from 2020

**Temperatures**
- Keep warming “well below 2 degrees Celsius”. Continue all efforts to limit the rise in temperatures to 1.5 degrees Celsius

**Finance**
- Rich countries must provide 100 billion dollars from 2020, as a “floor”
- Amount to be updated by 2025

**Differenciation**
- Developed countries must continue to “take the lead” in the reduction of greenhouse gases
- Developing nations are encouraged to “enhance their efforts” and move over time to cuts

**Emissions objectives**
- Aim for greenhouse gases emissions to peak “as soon as possible”
- From 2050: rapid reductions to achieve a balance between emissions from human activity and the amount that can be captured by “sinks”

---

**Burden-sharing**
- Developed countries must provide financial resources to help developing countries
- Other countries are invited to provide support on a voluntary basis

**Review mechanism**
- A review every five years
  - First world review: 2023
- Each review will inform countries in “updating and enhancing” their pledges

**Climate damage**
- Vulnerable countries have won recognition of the need for “averting, minimising and addressing” losses suffered due to climate change
Climate Change will change Arctic dynamics

As ice melts, a wide range of activities increase. Shipping, oil and gas exploration, tourism—all could become more accessible as thick ice recedes.

**Arctic open for commerce**

- **Northern Sea Route**
- **Possible Central Arctic Route**
- **Kara Sea**
- **East Siberian Sea**
- **Greenland (Denmark)**
- **Baffin Bay**
- **Chukchi Sea**
- **Beaufort Sea**
- **Northwest Passage**
- **Seattle Canal Route** 48-day transit, 11,300 nautical miles

**Oil and gas in the Arctic**

Area north of the Arctic Circle has an estimated 90 billion barrels of undiscovered oil.

- **Probability of finding oil, gas**
  - 50-100%

**Arctic accounts for 13% of undiscovered oil, 30% of undiscovered natural gas, 20% of undiscovered natural gas liquids.**
and geopolitical rivalry

RUSSIA’S MILITARIZATION OF THE ARCTIC

GREENLAND
(Denmark)

ICELAND

ALASKA

CANADA

Provideniya
Potential dual use military and civilian “rescue center” site.

Zvyozdny
Airbase

Mys Shimida
Potential airbase.

Pevek
Potential dual use military and civilian "rescue center" site.

Anadyr-Ugolny
Air drone base and air reconnaissance for Russian navy in eastern waters.

North Pole
Unclaimed Territory

Nagurskoye
Airbase

Sredny Ostrov
Airbase

Temp Airbase

Tiksi
Airbase scheduled for modernization.

Rogachevo
Airbase scheduled for modernization.

Alykel
Airbase scheduled for modernization.

Arkhangelsk
Location of the new North Arctic command.

Naryan-Mar
Airbase scheduled for modernization

Vorkuta
Airbase scheduled for modernization

Nadyr
Potential dual use military and civilian "rescue center" site.

Severomorsk
Headquarters of the Northern Fleet.

Pechenga
200th Army brigade

Alakurtti
Military base with 3,000 radio electronics experts.

Norway

Sweden

Finland

RUSSIA

Rise of emerging regions’ business giants

By 2025, emerging regions are expected to be home to almost 230 companies in the Fortune Global 500, up from 85 in 2010

Number of Fortune Global 500 companies

Total in emerging regions


23 23 24 85 229

1 The Fortune Global 500 is an annual ranking of the top 500 companies worldwide by gross revenue in US dollars.
2 All emerging regions with the exceptions of China and Latin America combined until 2000.
3 Fortune Global 500 share in 2025 projected from revenue share of countries in 2025.

SOURCE: MGI CompanyScoop; McKinsey Global Institute analysis

McKinsey & Company  |  42
Rise of State Capitalism

Emergence of State Capitalism:
Growth in foreign assets by government style

Note: Rolling 4 quarter sums, National Data (foreign exchange reserves) and author's estimates (Gulf WEFs, CIC)

Author: Brad Setser
Perceived decline of American exceptionism

Chong Wook Lee and Vartan Gregorian Distinguished Lecture Series

The Crumbling of the Pax Americana

Chas Freeman
Lecture 1 of 3
Thursday, February 4, 2016
4 p.m.
Salomon 001
79 Waterman Street

For more information visit
watson.brown.edu/events

CRIMEA ANNEXATION
VI. Globalization and Its Discontents

– Clinton's major political advantage was economy—longest sustained period of growth by 2000

– Federal Reserve's low interest, easy money policies along with Internet boom cut unemployment to 4%
  • Inflation remained low

– In such a positive economy, Clinton and Republican Congress deregulated financial sector
  • Loosened rules on new instruments called “derivatives”
  • Repealed Glass-Steagall Act of 1930s that barred commercial banks from dealing in securities
It’s Capital, stupid!
Global aging slows economic growth

The world's population is aging and, in developed countries, the size of the elderly population has already surpassed that of the 12-24 age group.

World not ready for aging population

The number of people in the world aged 60 and older is expected to grow past 2 billion by the year 2050.

Total population of people aged 60 and older

SOURCE: United Nations Population Fund
“Demographic Cliff”

Demographic Cliffs Around the World

<table>
<thead>
<tr>
<th>Country</th>
<th>Peak Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>1989–1986</td>
</tr>
<tr>
<td>United States</td>
<td>2003–2007</td>
</tr>
<tr>
<td>Germany</td>
<td>2010–2013</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2010–2013</td>
</tr>
<tr>
<td>France</td>
<td>2010–2020</td>
</tr>
<tr>
<td>Italy</td>
<td>2013–2018</td>
</tr>
<tr>
<td>South Korea</td>
<td>2010–2018</td>
</tr>
<tr>
<td>Spain</td>
<td>2025</td>
</tr>
<tr>
<td>China</td>
<td>2015–2025</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, United Nations Pop. Div.
Longer life expectancies encourage saving
Back to the French Revolution and Belle Epoque?
The fabulous top 0.01%
They didn’t get there by “Earned Income”
Liquidity trap - central banks stimuli creates asset bubbles

- **1621** Tipper and See-Saw Time
  Money in German states was debased with an intention to defraud neighboring states by exchanging the debased currency for solid currency in those states, all in an effort to raise money for the Thirty Years’ War

- **1637** Tulip Mania
  In Holland, tulips that were rare at the time became symbols of prosperity; the most expensive tulips sold for fifteen or twenty times the annual salary of a skilled craftsman

- **1720** South Sea Company
  A British joint-stock company and public-private partnership created to consolidate and reduce the cost of debt but marketed to the public as a growth opportunity because of its monopoly on trade with South America, which would realistically never take place because of Spain’s control over that continent at that time

- **1720** Mississippi Company
  A bank and trading company with a monopoly over French foreign trade, exaggerated claims of the wealth of French colony Louisiana led to wild speculation in the shares of the company

- **1846** Railway Mania
  Speculative frenzy over railroad shares in Britain

- **1920s** Florida Land Boom
  Speculative land boom

- **1985–92** Enciumento (Mounting)
  Economic bubble in Brazil facilitated by new banking laws that were intended to stimulate industrialization, but that encouraged unbridled speculation among IPOs and other practices

- **1969–70** Poseidonen Bubble
  Stock market bubble in Australian mining shares initially prompted by a speculative frenzy over shares of a company that had made a large nickel discovery at a time when nickel was in shortage

- **1997–2000** Dot-com Bubble
  Speculative bubble in stocks related to the burgeoning internet

- **2007** Uranium Bubble
  Uranium prices skyrocketed, possibly initially prompted by flooding of the Cigar Lake Mine in Saskatchewan, the largest undeveloped source of uranium in the world, but when they had not produced anything at the time

- **2008s** Real Estate Bubbles
  2005 – India
  2006 – UK, Ireland, Spain
  2007 – US, China
  2008 – Romania
  2009 – Australia

- **2006** Batukam Craze
  Speculative frenzy over Batukam amulets (look like oversized pieces of vaguely hindu/buddhist jewelry that you wear around your neck) in Thailand that were thought to bring wealth

- “An asset-price bubble is when asset prices are driven up far above their fundamental economic values due to irrational- psychological behavior of investors.” Subjectmoney.com

- “An asset-price bubble is when asset prices exceed fundamentals because owners believe they can resell the asset for a higher price in the future.” Brunnemeier, The New Palgrave, 2008

- “An upward price movement over an extended range that then implodes”, Kindleberger, 1978

- “When the prices of securities or other assets rise so sharply and at such a sustained rate that they exceed valuations justified by fundamentals, making a sudden collapse likely - at which point the bubble “bursts.” Financial Times

- “Price increases (or declines) that become unmoored from fundamental valuations.” Bill Dudley, President of the NY Fed, 2010

- “An asset price bubble is when the prices of specific asset classes are over-inflated due to excess demand for the asset as an investment vehicle.” USconomy.com

oldman Sachs Global Economics, Commodities and Strategy Research
Resultant risks of financial crises
Rising anger against globalization and elitism

The Disappearing Middle Class

Only 42% of U.S. households earn middle class wages.

Poverty level jobs are expected to account for 70% of job growth in the next 7 years.

77% of Americans have experienced living paycheck to paycheck.

1 in 5 Americans is now on food stamps.

32% of households have zero or negative wealth.

It is no longer the other guy. We ARE the other guy.

Left Turn Only
Rise of isolationist nationalism

Rise of nationalism in Europe: Results of most recent national elections

% of votes won by nationalist party
- 1-8
- 9-18
- 19-28
- 29+

- **Switzerland**
  - Swiss People’s Party 29%

- **France**
  - National Front 14%

- **Netherlands**
  - Freedom Party 10%

- **Denmark**
  - Danish People’s Party 21%

- **Germany**
  - Alternative for Germany 4.7%

- **Austria**
  - Freedom Party 35.1%

- **Slovakia**
  - Our Slovakia 8%

- **Hungary**
  - Jobbik 21%

- **Cyprus**
  - ELAM 3.7%

- **Greece**
  - Golden Dawn 7%

- **Italy**
  - Northern League 4%

- **Finland**
  - The Finns 18%

In many countries nationalists got higher scores in European Parliament elections and opinion polls.
Divisive democracy

Results of the British Referendum
The United Kingdom has voted to leave the European Union. Scotland and Northern Ireland voted to remain, but Britain and Wales elected to leave. Its departure may encourage other countries to reconsider their membership in the bloc.

<table>
<thead>
<tr>
<th></th>
<th>REMAIN</th>
<th>LEAVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>48.2%</td>
<td>51.9%</td>
</tr>
<tr>
<td>England</td>
<td>45.4%</td>
<td>54.6%</td>
</tr>
<tr>
<td>Wales</td>
<td>44.5%</td>
<td>55.5%</td>
</tr>
<tr>
<td>Scotland</td>
<td>62.2%</td>
<td>37.8%</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>55.7%</td>
<td>44.3%</td>
</tr>
</tbody>
</table>

English voters are dragging Northern Ireland out of the EU.
SINN FEIN NATIONAL CHAIRMAN DECLAN KEARNEY

Scotland has delivered a strong, unequivocal vote to remain in the EU, and I welcome that endorsement of our European status.
SCOTTISH FIRST MINISTER NICOLA STURGEON

Maybe you’ve got what it takes to be a bad president.
AMERICAN HORROR STORY
Web of Middle East rivalries

Web of Interests
As the U.S., Russia and regional powers get increasingly involved in the wars ravaging Syria, Iraq and Yemen, they often are bidding to check each other's sway.

against Assad regime

Turkey
GOALS: Depose the Assad regime in Syria. Cortail Syrian Kurdish groups affiliated with the PKK, a banned Kurdish group in Turkey.
ACTIONS: Backs Syrian rebel groups with weapons and funds. Bombs PKK targets in Iraq and conducts some airstrikes on ISIS in Syria.

U.S.
GOALS: With the help of Western and regional allies, depose and ultimately defeat ISIS. Share up the government in Iraq. Ultimately seeks the removal of Assad.
ACTIONS: Strikes ISIS targets in both Syria and Iraq and assists Iraq and Kurdish forces fighting ISIS with weapons and with training. Provides limited assistance to Syrian moderate groups fighting Assad and ISIS.

Saudi Arabia
GOALS: Limit Iranian influence. Secure the ouster of the Assad regime. Combat ISIS.
ACTIONS: Provides financial backing to Syrian rebel groups fighting Assad. Limited participation in strikes against ISIS in Syria but not in Iraq.

On the sidelines
Israel
GOALS: Contain the rise of Iranian influence and the growth of Hezbollah's arsenal in Lebanon.
ACTIONS: Largely staying out of the Syrian conflict. Strikes some Hezbollah targets in Syria. Provides limited medical help to some Syrian rebels.

Russia
GOALS: Prop up the Assad regime. Protect its naval facility in Syria, its only one in the Mediterranean. Contain U.S. influence in the region and expand its own. Combat ISIS.
ACTIONS: Strikes moderate and Islamist Syrian rebels and less frequently ISIS. Supplies weapons and advisors to the Syrian army. Shares intelligence with and sells weapons to Iraq.

Iran
ACTIONS: Provides weapons, military guidance and fighters to Iraq and Syria.

Battling in Yemen
Saudied Sunni coalition is fighting to remove President Abed Rabbo Mansour Hadi, who was ousted in Mar by Iranian-supported Houthi forces. The U.S. helps interdict any arms smuggling in the Red Sea from Iran to the Houthis. Also conducts drone strikes against al Qaeda.

Geopolitics and injustice spawn chaos and terror
Modernity: Flat, Inter-connected, Dynamic, and ....

Global Connectivity

Global supply and value chains

- Korea: Inputs ($80.05)
- Germany: Inputs ($16.08)
- France: Inputs ($3.25)
- Japan: Inputs ($9.70)
- Other: Inputs ($62.79)

USA
- Distribution ($90.00)
- Inputs ($24.63)
- Factory Gate Price ($194.04)
- VA ($6.54)

China
- Misc. ($45.95)
- Factory Gate Price ($194.04)
- VA ($6.54)

Apple
- Retail ($600)
- ($329.95)

Active iOS & Android Devices, U.S. versus China (millions)

- United States
- China
... Inter-dependent

WORLDWIDE TRADE FLOW - OLEFINs

CHINA'S OUTBOUND INVESTMENT FROM 2005 TO 2013 (€)

The China factor | China is the No. 1 trading partner of six G-20 nations

Share of selected countries' trade (imports plus exports) with China at the start and the end of the 2000s.

China is the No. 1 trading partner of:

And the No. 2 partner of:

China's share of total world exports

Source: International Monetary Fund Direction of Trade Statistics via Raini Patel of Brands By Nature.
Modernity: Regional diversity and cooperation

SAARC = South Asia Association for Regional Cooperation
PIF = Pacific Islands Forum
ARF = ASEAN Regional Forum
Modernity: Rise of strongmen for “national renaissance”
Modernity: Rise of nationalism, chauvinism, nativism, and localism

Far-Right Leads Eurosceptic Earthquake
Performance of eurosceptic parties in the 2014 European elections

- United Kingdom (UKIP): 27.5%
- Denmark (DF): 26.6%
- France (FN): 25.4%
- Austria (FPÖ): 19.5%
- Hungary (Jobbik): 14.7%
- Netherlands (PVV): 13.4%
- Finland (Persus): 12.9%
- Greece (X.A.): 9.4%
- Germany (AfD): 7.0%
- Italy (LN): 6.2%

*As of May 26, 11:00 CET
Source: European Parliament
More European Black Swans may appear around the corner
Modernity: Rise of Generation-Z

PERSONALITY TRAITS THAT DEFINE Gen Z

1. PRAGMATIC
   60% say they want a long career with one company

2. COMPETITIVE
   Almost 1/2 consider themselves very competitive

3. CONNECTED
   78% prefer face-to-face communication with work and bosses

DEVELOPMENTAL INFLUENCES

4. SOCIALLY RESPONSIBLE
   93% say that a company’s impact on society affects their decision to work there

5. CUSTOMIZERS
   No limit of ideas, but 1/2 would rather get a job than create one

6. PLUGGED IN
   44% check in on social media at least hourly

7. SELF RELIANT
   Even though 77% say personal relationships with co-workers are important, many prefer to learn at their own pace

INSTITUTE FOR CORPORATE PRODUCTIVITY
Download the report at i4cp.com
China-Russia-Canada-America" line – 13,000km, entire trip to take two days, travelling at an average of 350km/h (220mph).

- Crossing the **Bering Strait** between Russia and Alaska in 200 km (125 miles) of **undersea tunnel**
- **China to provide funds, technology and construction and to share operation** with countries traversed in exchange for resources
- According to **Beijing Times** report 8 May, 2014, **already in discussions.**
- According to Inhabitat.com 23.08.11, Russia has already given the greenlight to $65 Billion Siberia-Alaska Rail and Tunnel to Bridge the Bering Strait.

中国筹划高铁大棋局:国 人有望乘高铁2天到美国 2014年05月08日 京华时报 (Beijing Tiems)

**China-Russia-Canada-America line' would run for 13,000km across Siberia and pass under Bering Strait through 200km tunnel – Guardian, 15.05.2014**
Modernity: Geopolitical Power Diffusion

BRICS

ASEAN+3

NATO-OTAN

MERCOSUR (MERCOSUL)

AFRICAN UNION

THE ARAB SPRING

NGO NETWORK

YOU HAVE the POWER™
Modernity: Bi-Multi-polar World Order

Multiplex World  China gains influence as US retracts World unlikely be dominated by any power
Modernity: Ecological consciousness

Top Countries with Installed Renewable Electricity by Technology—2012

"STEG" (Tunisian Company of Electricity and Gas).
Modernity: Shared Destiny, for Better or Worse

- Climate change
  - Stratospheric ozone depletion
  - UV exposure
  - Vertical pathways
  - Desertification and land degradation
  - Agroecosystem productivity
  - Human health
    - Decline in several ecosystem services
    - Water quantity and safety
    - Population displacement
    - Altered precipitation
  - Biodiversity loss and ecosystem function
  - Freshwater decline

Energy Connectivity in an Interconnected World
27 October 2014

Global FX market turnover

Net-net basis, daily averages in April, in billions of US dollars

<table>
<thead>
<tr>
<th>Turnover by instrument</th>
<th>Turnover by counterparty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Adjusted for local and cross-border inter-dealer double-counting.

Sources: Triennial Central Bank Survey; BIS calculations.

© Bank for International Settlements
Thank you

Andrew K P Leung, SBS, FRSA
www.andrewleunginternationalconsultants.com

International and independent China Specialist with over 40 years professional experience covering Hong Kong and Mainland China. Chairman of Andrew Leung International Consultants, founded in London now relocated to Hong Kong. Provides strategic advice on China-related finance, investment, politics and economics globally, including both business and governments. China Futures Fellow selected worldwide by Berkshire Publishing Group, Massachusetts. On the Brain Trust of Evian Group, a Lausanne-based think-tank. Founding Chairman of China Group of Institute of Directors City Branch, London. Advisory Board Member of China Policy Institute, Nottingham University, 2005-10. Governing Council, King’s College London, 2004-10. Visiting Professor with Metropolitan University Business School. Helped set up Standard Chartered Bank’s first merchant-banking subsidiary in Hong Kong (1983); oversaw the trans-migration of industries into China as Deputy Director-General of Industry; US-government sponsored month-long visit to brief Fortune 50 CEOs on China beyond Tiananmen Square (1990); Editor-at-Large of a London-based international consultancy on China’s energies (2007). Sponsored Speaker on China at international conferences, including Forum Istanbul, Turkey, Annual African Banking and Financial Institutions Conference in Accra, Ghana, and Low Carbon Earth Summit in Dalian, China. Regular interviewee on live television with CNBC, Aljazeera English, Times Now of India, BBC and other international channels. Awarded Hong Kong’s Silver Bauhinia Star (SBS) and included in UK’s Who's Who since 2002.