EASTASN / EE / EALC – 402T Entrepreneurship in Asian High-Tech Industries Stanford University, 9 April 2019

Asia Entrepreneurship Update - 2019

Richard B. Dasher, Ph.D. Director, US-Asia Technology Management Center Adjunct Professor, Stanford University





- Introduction: some current economic / business trends in Asia
- Participation and attitudes toward entrepreneurship in Asia
- Ecosystems for entrepreneurial innovation in Asia economies
- Discussion

Reminder: Welcome to everyone! -- Available for credit to Stanford students

- Weekly <u>public</u> lecture / panel discussion series presented by the US-Asia Technology Management Center
 - Every Tuesday, through May 28, 2019
 - See <<u>http://asia.stanford.edu</u>> for upcoming schedule
- <u>Mission</u>: <u>new information and insights</u> into entrepreneurship and supporting ecosystems in Asia high-tech industries
- Available for credit to Stanford students
 - EASTASN-402T "Entrepreneurship in Asian High-Tech Industries"
 - Cross-listed as EALC-402T, EE-402T
 - No pre-requisites, open to undergrads and graduate students
 - May be repeated in future years for credit
 - SEE SYLLABUS FOR REQUIREMENTS may be different from similar seminars in other departments



Some current economic / business trends in major Asia economies

GDP of selected economies (2018 est.) – calculated at PPP in current international dollars

Size		GDP (trillions	14.	South Korea	2.14
rank	Economy	of \$)	16.	Canada	1.85
	World	\$134.98	17.	Saudi Arabia	1.84
1.	China	25.24	19.	Australia	1.31
2.	USA	20.41	20.	Thailand	1.31
3.	India	10.39		Taiwan	1.23
4.	Japan	5.62	24.	Pakistan	1.14
5.	Germany	4.37	25 .	Malaysia	1.00
6.	Russia	4.17	28.	Philippines	0.96
7.	Indonesia	3.49	30.	Bangladesh	0.75
8.	Brazil	3.39	33.	Vietnam	0.71
9.	U.K.	3.03	36.	Singapore	0.55
10.	France	2.96		Hong Kong	0.48

-- IMF, "Report for Selected Country Groups and Subjects (PPP valuation of country GDP)", accessed 2/06/2019 2019.04.09 Richard B. Dasher, Stanford University 5

GDP history @ PPP (current dollars): The Big Five

40,000.00 \$ billions



GDP history at PPP (current dollars): The "Tigers"



2019.04.09

GDP history at PPP (current dollars): SE Asia



(Real) GDP growth rates of selected Asia economies



2019.04.09

What is going on in Asia economies 1. Growth rates (discussion of previous slide)

China: noticeable slowing



- Additional 6.2% in China = a lot more actual economic output than is created by higher growth rates in smaller economies
- Chinese government compensating through international expansion
 - (Not only reason, but) "Belt and Road" helps Chinese infrastructure companies expand to world markets as domestic infra spending declines
 - International investment (especially megadeal VC) in SE Asia (as well as other developing economies)
- Expect protectionism in slowing economy; China not yet opened up

• GDP growth in China, SE Asia shows rapid rise of middle class

- Leapfrog older patterns of infrastructure development (mobile banking, ecommerce, etc.)
- India GDP growth leads the way, but two separate economies
 - World IT service providers and factor-driven domestic economy

2. Asia developing its own ecosystem for growth

New supply chains service Asia consumer markets

- China developing entire economic system for more self-sufficiency
 - Targeted industries and technologies: chips, automobiles, AI
- SE Asia, China no longer just a component maker for US, EU, Japan

Cross-border business (expansion) in Asia

- After U.S. pulled out of 12-country TPP (Trans-Pacific Partnership)
- Expansion by new Asia giants: Grab, LINE, Go-Jek, Lazada

Intra-Asia investment thriving

- Now seeing more major VC investments inside Asia (led by Asian investors)
 including many cross-border
- More unicorns being created, especially in SEA
- Will discuss more in innovation ecosystem section

- 3. SE Asia is battleground between U.S., China for influence, business expansion
 - Government initiatives: RCEP, Belt and Road
 - Giant ecommerce & other consumer digital firms battle it out
 - Uber sells SE Asia business to Grab (but gets Grab stock)
 - Alibaba buys controlling interest in Lazada (Singapore-based regionalwide ecommerce) and invest \$1 billion+ in Tokopedia (similar firm in Indonesia)
 - Expedia-led group invests in Traveloka
 - Amazon starts Prime services in Singapore
 - M&A and investing seems to be about market presence (more than about innovation)

4. Social-driven business development is hot topic

Social and environmental problems are being transformed into opportunities in Asia – drivers include:

- Demographic change aging society
- Social inequality e.g. servicing the "unbanked" (mobile payment systems are a driver of growth at present)
- Awareness of social and environmental needs
 - E.g. UN SDGs

Also a driver: Shift to digital economy – leapfrog opportunities (led by mobile payments, electric vehicles, crypto-currencies)

Still great variation among Asia economies

At different stages of economic development

Cultural & political differences, market preference differences

Big picture – current economic trends in Asia

5. Changing role of entrepreneurial innovation in growth

	Factor-driven Economies*	Efficiency- driven Economies*	Innovation-driven Economies*
Typical per-capita GDP (at PPP)	Below approx. \$15,000 / year	Approx. \$15,000 - \$35,000 / year	Approx. over \$35,000 / year
Societal developments	Industrialization, urbanization	Labor and capital shortages, needs for higher skills	Wealth spreads throughout pop, higher educ. levels
Business opportunities	"Gold rush" to supply basic demands	Develop new markets - domestic or international	Creative, fresh new ideas, "out of the box" thinking
Key competitive strengths	Get there first!	Operational efficiency, rapid scaling, high quality	Manage (allow) risk, early ID of great new ideas, sustain high growth
Distinctive government policies	Basic laws, establish industry base	IPR, select & promote key industries	Encourage entrepreneurs, bridge over "valley of death"

Economic development status & innovation in some major Asia economies

	Per cap GDP (2017, @PPP)	Stage of econ development	Distinctive features and concerns
China (PRC)	US\$16,800 (varies greatly by region)	Efficiency- driven but investing in innovation economy	 Globalization, M&A for expansion Huge rise in VC, government support for R&D and innovation Concern about middle-income trap
Japan	\$43,300	Innovation- driven	Big firms slow to adopt open innovation, but startup ecosystem growing
S. Korea	\$38,300	Innovation- drivenBig firms slow to adopt positive innovation, but startup ecosys growing	
India	\$7,100	Factor-driven (with "islands" of advanced firms)	 Two distinct innovation systems: International tech services economy Domestic growth economy

Economic development status & innovation in selected SE Asia economies

	2017 per cap. GDP (@PPP)	Econ stage	Distinctive features
Singapore	US\$93,900	Innovation -driven	Financing hub for entire region, government investment funds for startups
Indonesia	\$12,300	Efficiency- driven	Largest domestic market in region; infrastructure still rolling out; unicorns function as big firms (but for open innovation or global expansion?)
Thailand	\$17,900	Efficiency- driven	Large industrial base, inc. foreign manufacturing groups; new infrastructure in devel. (e.g. trains)
Malaysia	\$29,400	Efficiency- drivenEstablished node in Asia-wide supp chains	
Vietnam	\$6,800	Factor- driven	Outsourced manufacturing; early- adopter B2C



Participation and attitudes in Asia toward entrepreneurship

Introduction: Global Entrepreneurship Monitor

- Two yearly surveys of 54+ economies (countries) around the world
 led by Babson College + three partners (in Chile, Malaysia, Korea)
- <u>Adult Population Survey</u> of at least 2,000 adults in each economy described – often many more people
 - Conducted by national teams (e.g. China survey done by Tsinghua University)
 - Four lead partners ensure compliance with standards
 - data not reported if, for example, insufficient number of respondents
 - (Not using data from <u>National Expert Survey</u>)
 - Survey of opinions of experts in each economy: they provide (subjective) assessments of ecosystem factors (government programs, physical infrastructure, cultural norms, etc.)
- Now 20 years of survey results most recent is 2018-19 GEM Report (released Q1, 2019)
- Website includes online database of country-specific data

GEM "TEA" (Total Early-Stage Entrepreneurial Activity)



General trend: TEA rate decreases as per cap GDP increases



% of 18 – 64 year old population engaged in TEA

USA TEA Rate Over Time



TEA rate

TEA rates over time – Asia economies in Big Five



Data from <u>http://www.gemconsortium.org/data</u>, accessed 2019.04.08





General comments on participation in entrepreneurship in Asia economies

- Given the amazing rise in GDP in many Asia countries, surprising that there are not more noticeable declines in TEA rates
 - China decline *may* be related to slowdown of economy
 - Offset by remarkable increase in available funding
 - Some structural changes in China
 - Appearance of global MNC size domestic firms (Baidu, Alibaba, Tencent, Huawei, etc.)
 - Provide prestige jobs that may have negative effect on TEA rate: siphoning off potential entrepreneurs

What do attitudes toward entrepreneurship in Asia reveal?

2019.04.09

GEM Survey: Attitudes toward entrepreneurship (among non-entrepreneurs)





2019.04.09



2019.04.09

Attitudes of non-entrepreneurs in Thailand



Attitudes of non-entrepreneurs in Japan





Entrepreneurship ecosystems in Asia

Basic elements of an innovation <u>system</u> -- applies to entrepreneurial innovation



As an idea is incubated, the needed inflow of people, capital, knowledge may change during the process

Key elements of ecosystem for startup companies

	Startup creation	Company growth	Exit
Capital	Angel funds	VC funds, (later stage: debt)	M&A or IPO
People	Founders, advisors (who receive stock)	Labor force (a) willing to work in startup (b) Capable of growing company	Flexible labor market: post-exit opportunities for founders, employees
ldeas/ knowledge	Access to R&D output, design thinking, access to market & business knowledge	Lean-startup principles, rapid prototyping, investor relations	Probability of realization of idea potential (not killing it) after M&A or IPO
Infrastruc- ture	Physical: incubators Legal and accounting infrastructure, consultants (paid)	Physical location, access to markets, Legal & accounting infra., etc.	Business infra: bankruptcy law, transparent accounting, etc.

Capital flow patterns in Asia

- Begin with friends and family money: universal in all economies
- Common bottleneck: angel investors with startup experience
 - Discussed more under "People"
- Venture capital investments have grown in Asia (although some recent slowdowns)
 - Flood of VC funds in China
 - Domestic VCs tend to reflect traditional financial institution investing
 - See Silicon Valley influence: initiatives by SV investors, local investors with SV background

Exit patterns differ greatly

- U.S.: 90% via acquisition, much larger IPOs, smaller % held by founders (in comparison to Asia patterns)
- In S. Korea, Japan: 85 90% of exits are by IPO, entrepreneur may keep over 50% of stock

Comparison: amount of VC invested in U.S. and China

Data from Prequin Pro



2019.04.09

Venture Capital – Worldwide 2012 – 2017

(All Stages) 7,000 5,811 5,786 6,000 5,268 5,052 5,063 5,000 4,624 4,000 2,847 2,483 3,000 2,134 1.950 1,<mark>951</mark> 1,851 ,<mark>488</mark>, 1,482 2,000 ,132 43 1,000 0 2012 2013 2014 2015 2016 2017 ■U.S. ■Asia ■Europe

Number of VC Deals

VC Deals - Funds Raised (All Stages)



Data: CB Insights, PwC, MoneyTree Report Q4 2017

Global mega rounds (\$100M+ rounds of funding)



Exits by venture-backed companies in U.S.



Data from KPMG Venture Pulse Q4 2017, p. 49, 56



Source: Venture Pulse, Q4'17, Global Analysis of Venture Funding, KPMG Enterprise. *As of 12/31/2017. Data provided by PitchBook, January 16, 2018.

2019.04.09

VC in other Asia countries – 1



🔸 Japan

- Amount of VC invested in 2017: about \$2.5 billion
- Estimate for 2018 = \$3.8 billion
- Unlike U.S., corporate venture capital is part of most VC rounds in Japan
- But, over half of Japanese CVC went to outside Japan

S. Korea

- Startups raised about US\$574M in 2017
- S. Korean government has set aside a \$3 billion "Mother Fund" that private sector VCs can leverage (partially subsidize rounds); pledge is to increase by \$9 billion
 - Complex conditions on use
- Big firms active in M&A and CVC, but not

Number of venture capital deals in SE Asia (main deal location is Singapore, #2 is Indonesia)



Sources: Crunchbase as of Aug. 10, 2018; Tech in Asia

Interesting summation of VC investing





People flow patterns in Asia

- Entrepreneurs exist everywhere
- Growth stage is the bigger problem in Asia: labor markets still tend to lack good people who are willing to work for (other people's) startups
 - Incentivization by start-up companies is still not sophisticated (startup wages are cheap, little equity – creates less team cohesion)
 - "BAT" (Baidu, Alibaba, Tencent) draining off good workers in China
- Social stigma: not only fear of failure often cited, but GEM data suggests that perceived lack of opportunities is bigger problem
- Relative lack of mobility in some countries career cost of failure high
 - Entrepreneurs tend to stay with their company after exit relative lack of clear expectations about exit: so far, few serial entrepreneurs in Asia

Idea and knowledge flow in Asia

- Most Asia countries have focused on increasing IP output from universities, research institutions; emphasis on tech transfer
 - Not enough attention to flow of business knowledge to founders

Mentoring is not well-developed

- Considerations of "face"
- Less confrontational board management relations
- May be difficult, given Confucian traditions of apprenticeship (imitate the master, don't expect explanations or analysis)
- Start-up companies arguably have more difficulty getting to market in Asia (except China)
- Failure of open innovation systems start-up companies lack recipients for ideas
 - Big companies may buy start-ups, but usually fail to realize the potential of the external idea

Summary and final comments

• Entrepreneurship and ecosystems: robust and growing in Asia

- Attitudes toward opportunities for entrepreneurs reveals ecosystem development (although fear of failure is evident)
- Still some ecosystem weaknesses in Asia: mentoring, open innovation, (not discussed much) university-industry relations

Mega deals represent a noticeable new trend

- Unicorns that may not go on and exit
 - About half of all unicorns are in the U.S., another 30% in China (but some people argue that China has even more than U.S. – depends on valuation)
 - Ten unicorns in SE Asia, one in Japan (down from two)
 - Unicorn status allows the company to avoid the severe transparency required for a public company or an acquisition
 - May result in re-inventing mega business groups (like Japanese keiretsu)

US – China friction is a wild card

2019.04.09

Some upcoming sessions

- 4/16 Dr. Amit Kapoor, CEO of the Council on Competitiveness, India
- 4/23 Dr. C. Jason Wang, Director of the Center for Policy, Outcomes, and Prevention, and Associate Professor of Pediatrics and Medicine at Stanford University
- 4/30 Dr. Ashish Gupta, Co-Founder, Helion Ventures
- Subsequent sessions will feature social entrepreneurs, startups and investor perspectives in other regions
- SE Asia, S. Korea, etc.