Exploring new growth paths for Asian Pacific technology SMEs

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Technology SME growth strategies and the impact of national policies

Innovation Summit and International Conference, Tangerang, November 2, 2018

Key messages

National industrial policy is important, but can have unforeseen consequences – lessons from South Korea

Manufacturing led growth and employment is coming to an end – and automation will hit the workforce of developing countries also in services

SMEs need to define their own growth strategy – driving own R&D, combining global network with local insights, and leveraging digital channels can be powerful

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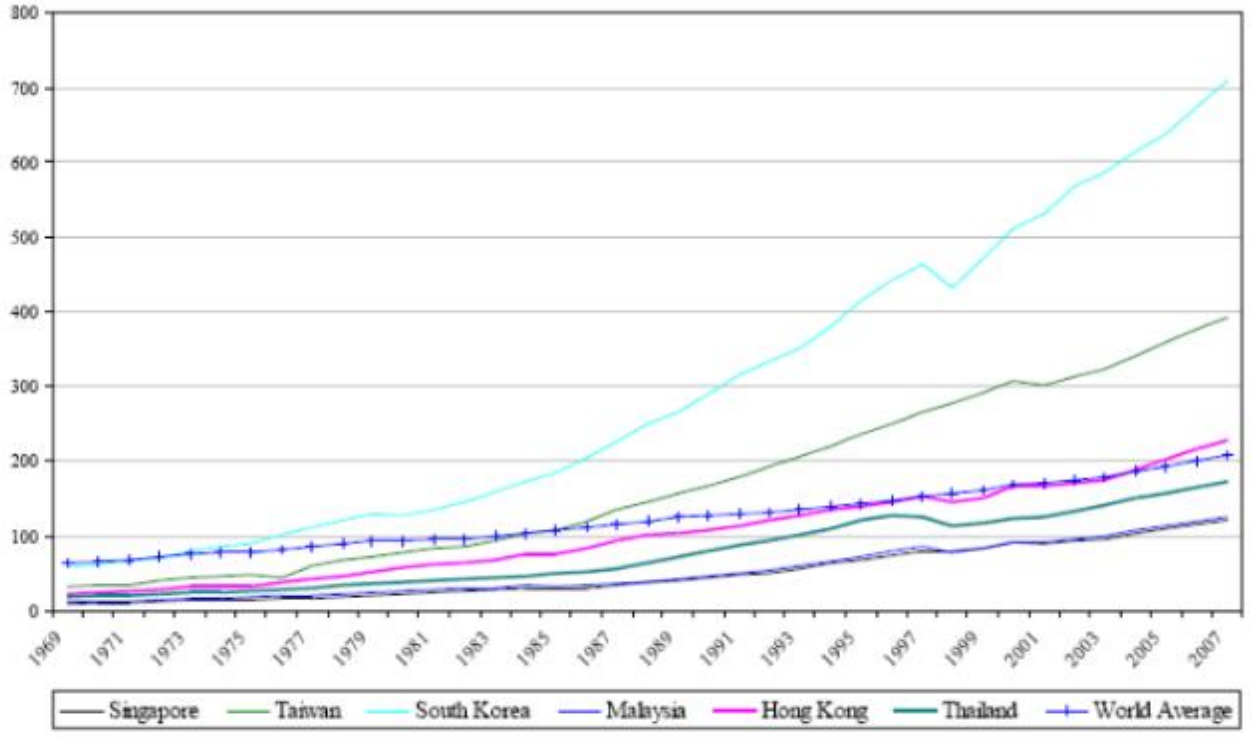
Among similar nations, Korea's growth rate has been stunning and is only surpassed by China

Countries with highest GDP growth (excluding China)

Real GDP



Source: Prof. Jaehoon Hahn, Yonsei University, *Introduction to the Korean economy and society* (lecture).

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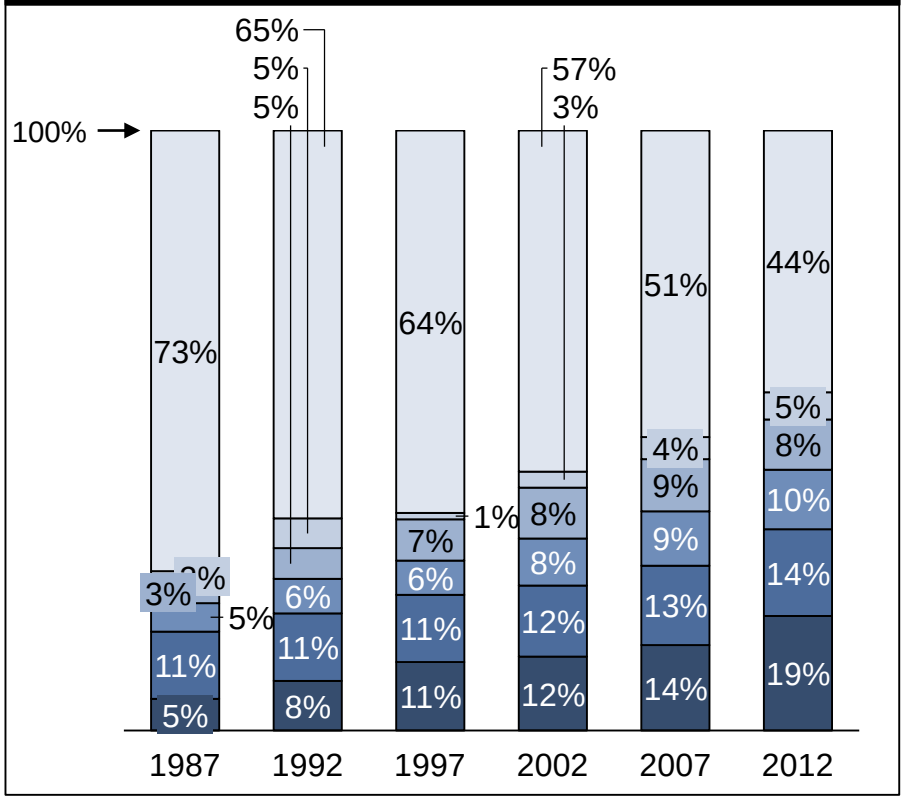
Korea used interventionist/protectionist strategy to drive manufactured goods exports by subsidizing target industries and related chaebols

Korean growth and industrial policy

Guided capitalism model

Period	Main policy direction
1950s	• Import substitution • Price stability
1962-1971	• Policy shift to export promotion (EP) • Expanding SOC[3]
1972-1981	• Heavy and Chemical Industrialization under EP • Administered credit allocation • Import substitution of parts and components
1982-1991	• Industrial rationalization • Initial liberalization and opening • Shift to private sector initiatives
1993-1998	• Deregulation • Globalization (capital and foreign exchange liberalization) • Fairness and transparency in industrial and trade policy • Technology based industrial policy

Chaebols' assets as a share of top 200 corporate assets (1987-2012)

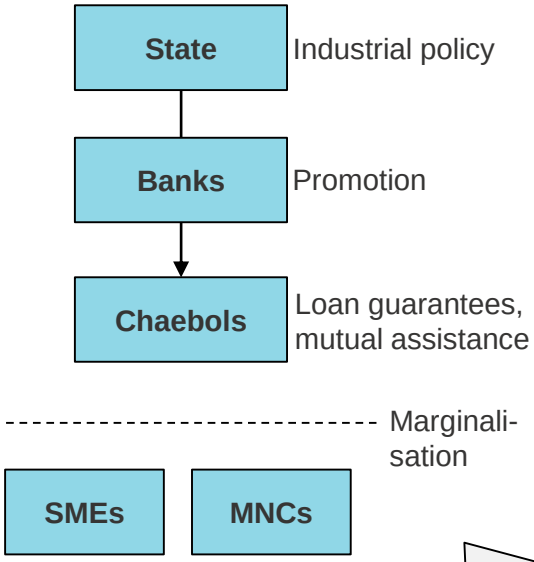


[1] Includes LG, GS, LS and their affiliates; [2] includes Samsung, Shinsegae, CJ and Hansol; [3]Social overhead capital such as roads, schools and hospitals.
Source: ERRI, 재벌 및 대기업으로의 경제력집중과 동태적 변화분석; Ahn, The outward-looking trade policy and the industrial development of South Korea.

Korea pursued substitution, while Malaysia, Taiwan and Vietnam pursued complementary strategy – the choice had effects on SMEs

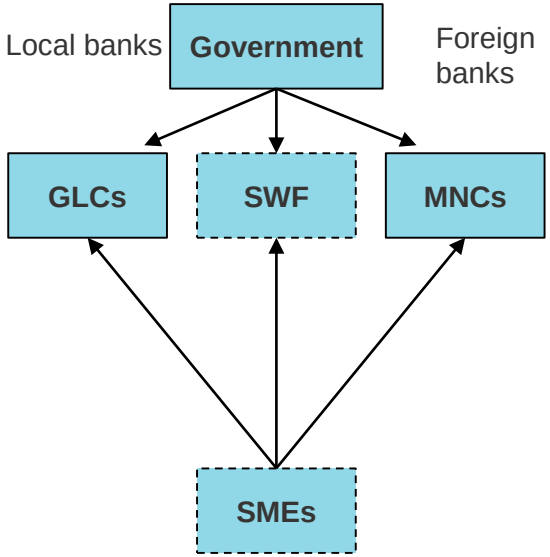
Comparison on national growth models

Korea (substitution strategy)

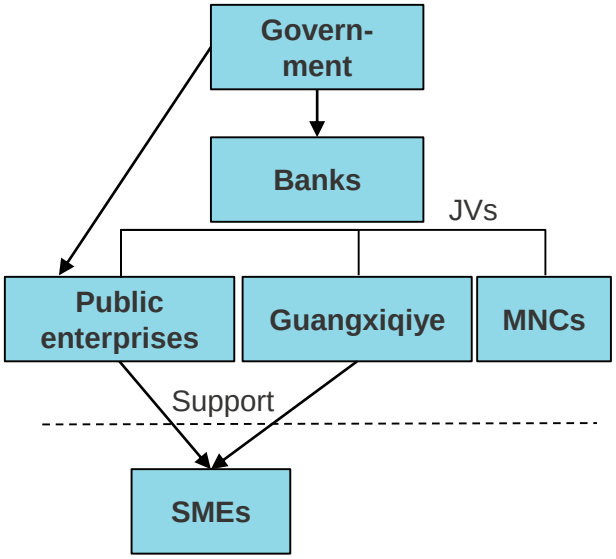


Unlike Japan, Taiwan and Singapore, Korean model required large outside financing (debt and other funding).

Singapore and Malaysia (compl. strat. – int'l model)



Taiwan and Vietnam (compl. strat. – semi-int'l model)



Vietnam pursues a semi-international complementary strategy similar to Taiwan model, yet with emergence of local conglomerates and weaker links to SMEs.

Note: MNC = multinational company, SME = small and medium sized enterprise, GLC = government linked company, SWF = sovereign wealth fund, SOE = 100% state owned enterprise, Guangxiqiye = local business groups; China applies a modified substitution strategy, leveraging JVs to expediate tech transfer process.

Source: Shin, Chang, *Restructuring Korea Inc*., pp. 11-22; Ha Thanh, Nguyen & Klaus Meyer (2004); Van Chung, Vu (2015); Reddal analysis.

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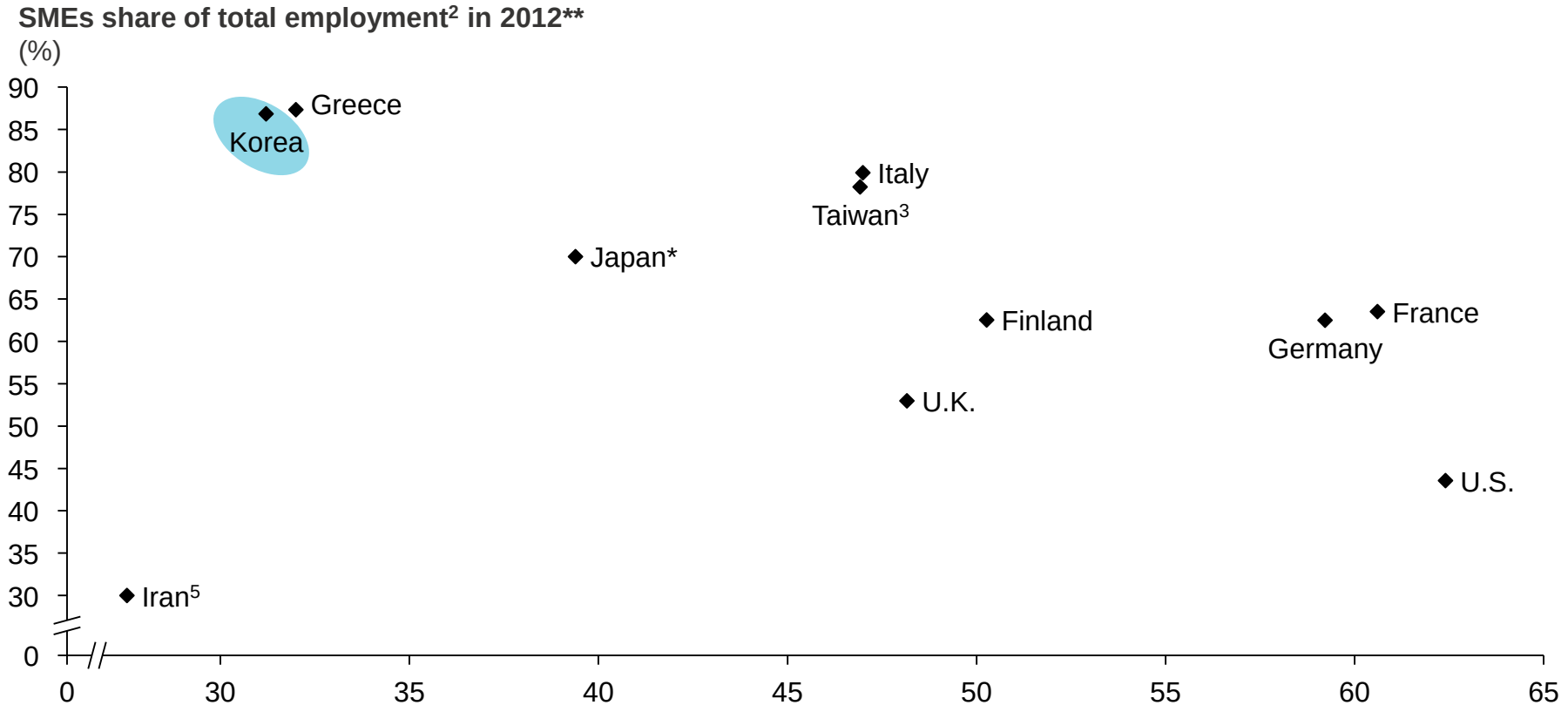
Yet a burning issue of Korean economy is that the SME sector is extremely inefficient and employs a large share of the population

SMEs contribution to overall economy by country



*Used 2013 number of labor forces and 2016 GDP for Iran and 2014 data for Korea and the U.S.; **Used 2013 data for Korea.

Source: [1]OECD, *Compendium of Productivity Indicators* (2016); [2]OECD, *Entrepreneurship at a Glance* (2015); [3]Ministry of economic affairs of the R.O.C and The conference board total economy database; [4]General Statistics Office of Vietnam; [5] Statistical Center of Iran (www.amar.org.ir).

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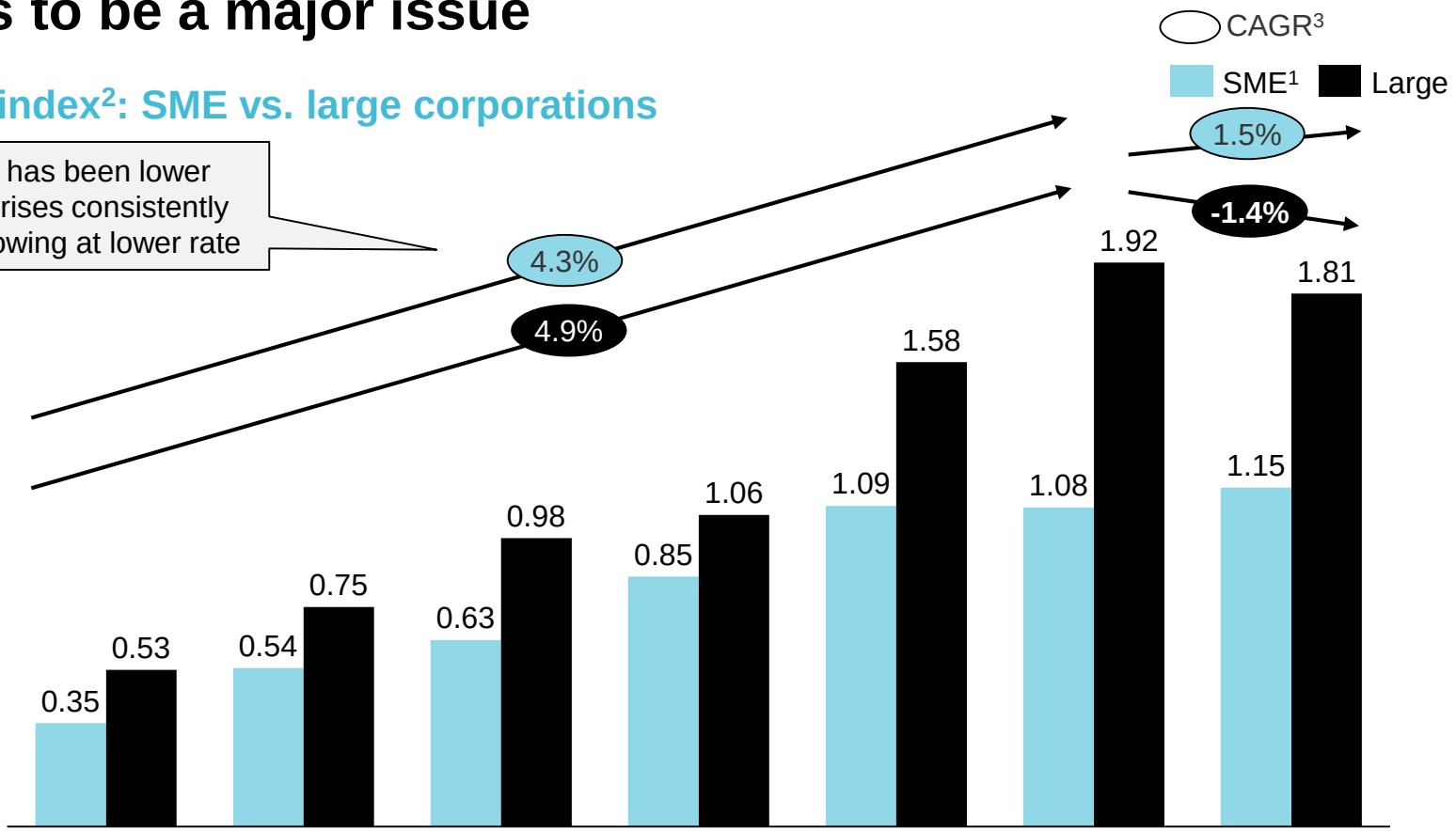
Productivity gap between Korean SME and conglomerates continues to be a major issue

Productivity index[2]: SME vs. large corporations

SME productivity has been lower than large enterprises consistently and has been growing at lower rate



Note: [1]SME includes companies with 10 – 300 employees; [2] Total productivity index, including labor and capital; [3]Compounded annual growth rate
Source: KEIT (2017).

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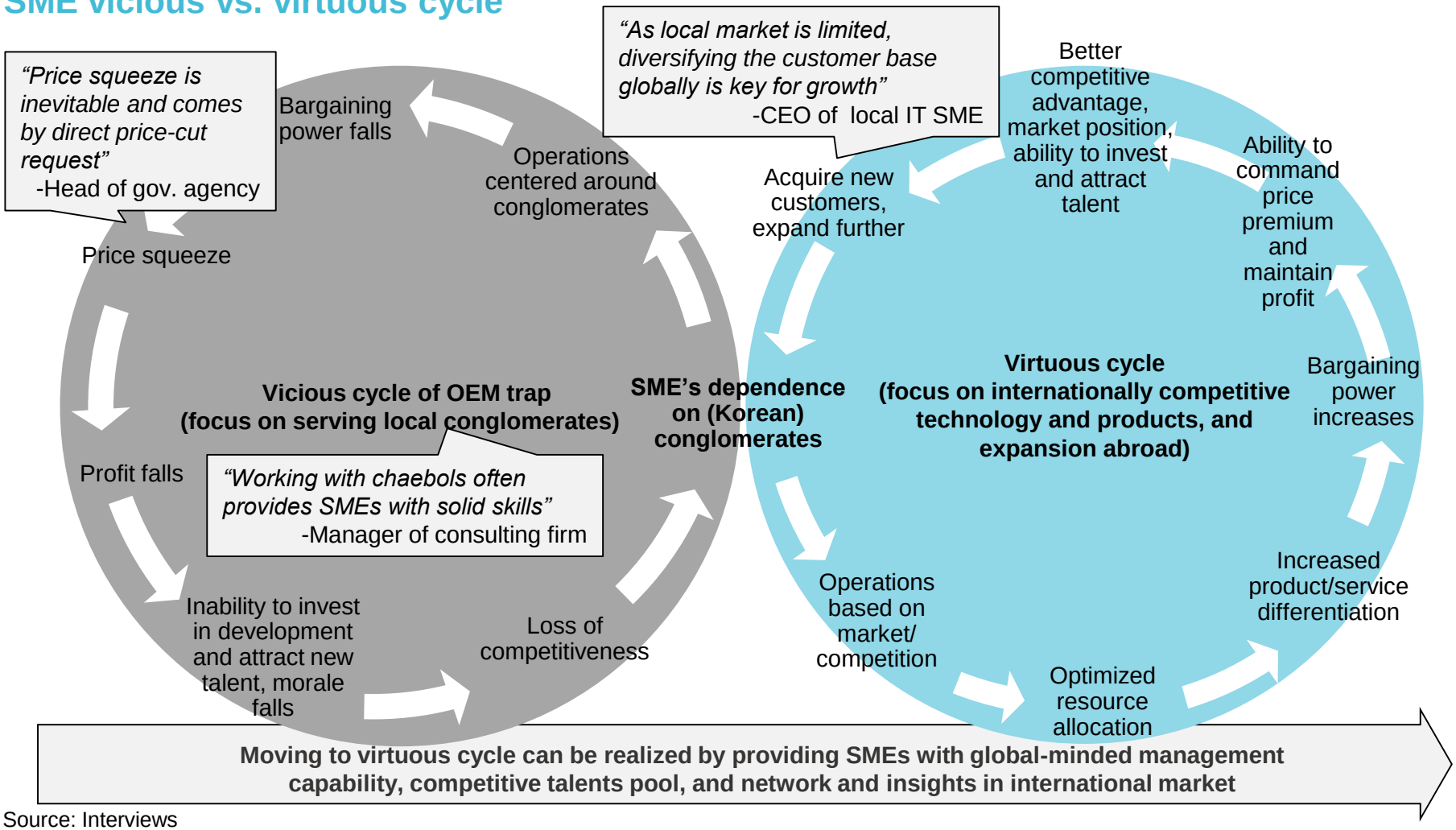
Korean SMEs are often locked in vicious cycle, as SMEs are complacent with their role as **supplier** – transition to virtuous cycles requires internationalization

SME vicious vs. virtuous cycle



Source: Interviews

Key messages

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SMEs need to define their own growth strategy – driving own R&D, combining global network with local insights, and leveraging digital channels can be powerful

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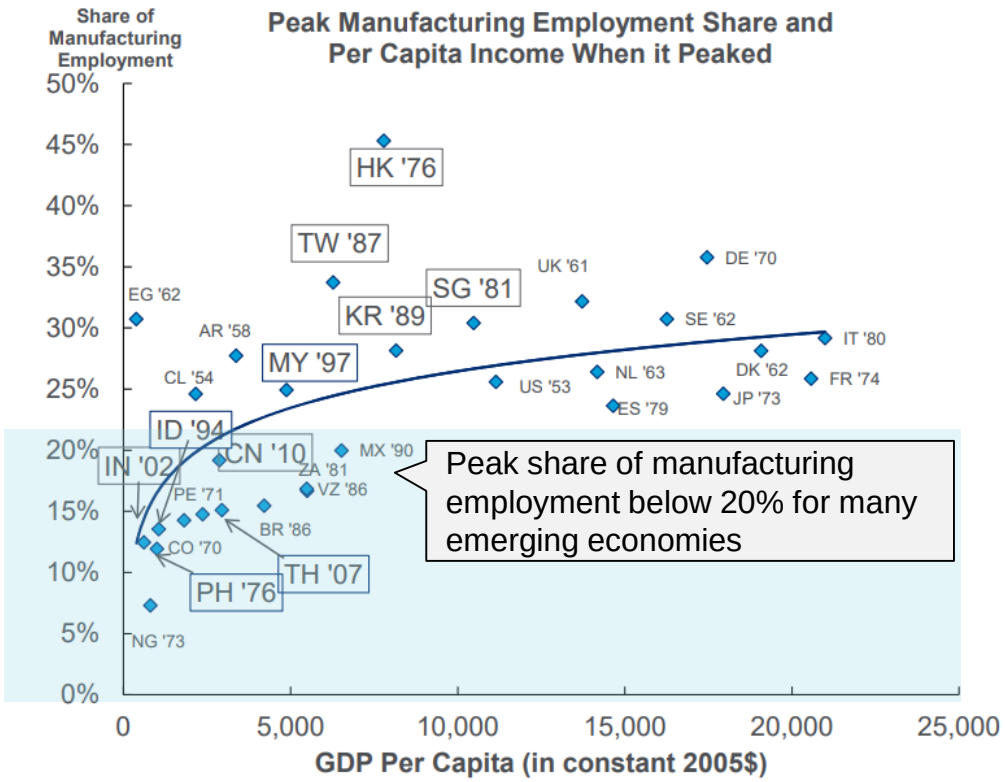
Avoiding OEM trap is even more critical for SMEs in developing nations – advantage in manufacturing, arising out of cheap labor will diminish

Peak manufacturing employment share and GDP per capita when it peaked

Percent, constant 2005 USD



Observations

- Trade has induced productivity gaps to close faster than gap in income as manufacturers must follow similar international standards
- Manufacturing is becoming less labor-intensive also in developing economies; thus peaked share of manufacturing employment has declined
- Automation coupled with additive manufacturing making OEMs from developing economies risk becoming redundant

Source: GGDC-10 Sector database, World Bank Development Indicators, Citi Research in “Technology at work v2.0: The future is not what it used to be.”

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Manufacturing share of GDP is declining worldwide – manufacturing export led growth will not be the panacea it used to be

Manufacturing share of GDP

Percent

Regions	2000	2005
East Asia and Pacific	19	15
Europe and Central Asia	25	23
Latin America and Caribbean	17	14
North America	16	12
South Asia	15	16
Sub-Saharan Africa	11	11
Tanzania	9	6
World	**19**	**15**
Low income	**10**	**8**
Lower middle income	**17**	**16**
Upper middle income	**24**	**21**
High income	**18**	**15**

Implications

- Share of manufacturing in GDP is declining everywhere in the world
- Stiglitz argues that this is the result of manufacturing productivity exceeding the rate of increase in demand
- 20th century national growth model characterized by export-led growth will not work in the future to the extent it did for East Asian countries
- Developing nations today need to define new national growth strategy that balances industry, services and other parts of the economy

Source: World Bank Development Indicators from Stiglitz, UNU-WIDER Conference Presentation (2018)

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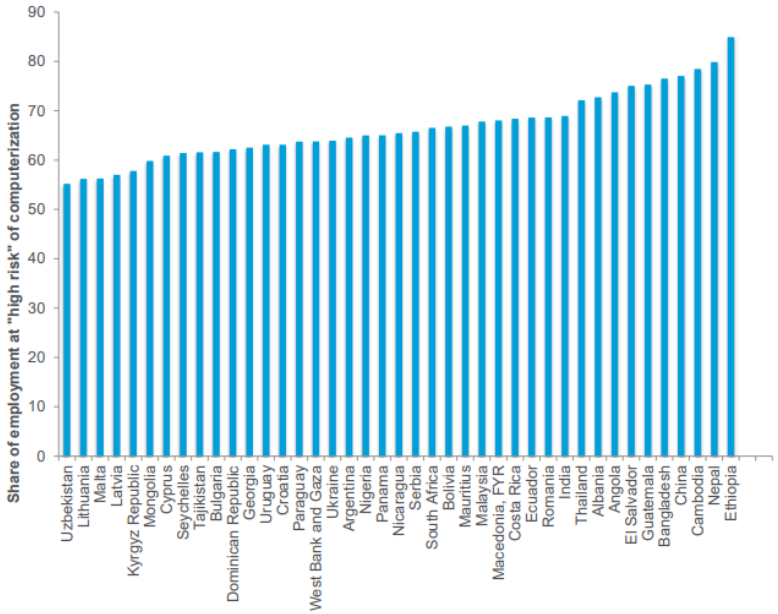
Reaching prosperity is getting harder for developing countries – their workforce is more susceptible to automation overall

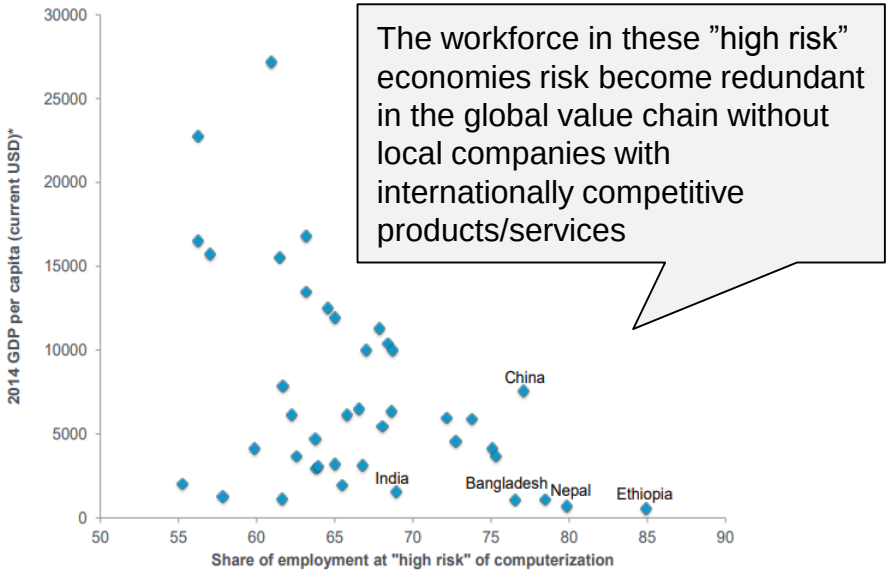
Impact of automation on workforce

Figure 2. Developing Countries Susceptibility to Automation



Source: World Bank Development Report 2016; based on Frey and Osborne (2013) methodology, Citi Research

Figure 3. Countries Susceptibility to Automation is Negatively Associated with their GDP per Capita



Source: World Bank Development Report 2016; World Bank national accounts data.
Note: For Angola and Malta 2013 GDP per capita figures were used, Citi Research

Source: World Bank Development Indicators, Citi Research in “Technology at work v2.0: The future is not what it used to be.”

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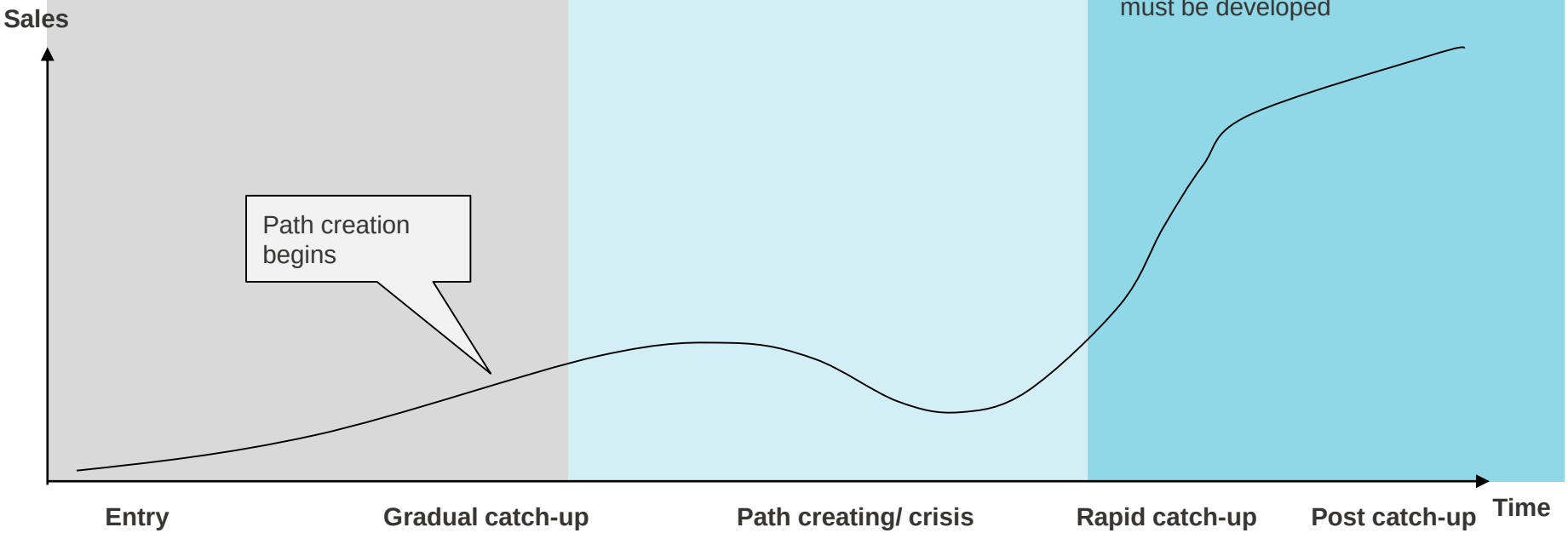
SMEs in developing nations require a unique path creation strategy, where internationalization is an integral part of success

Path creation strategy for SMEs: from OEM to OBM*

SME supplier to conglomerate
- Condition: late entry and resource poor
- Learning and building technology via external sources and in-house R&D
- Needs local conglomerates to supply to

Developing own design/brand
- Early strength in production skills acquired in supplier position
- Upgrade into higher-value-added products in the same industry
- Key challenges in weak brands, lack of marketing experience and incumbent litigations

Success as global company
- Consolidate global system that allows flexibility in cost management and customized marketing
- Risk of new entrants with lower cost advantage persists
- To sustain position, firm-specific and proprietary knowledge in narrow field must be developed



*OEM = original equipment manufacturer, OBM = original brand manufacturer; concepts can be also extended to services

Source: Lee, *Economic catchup and technological leapfrogging*

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Past Korean cases show that while OEM experience can expediate the tech transfer, investment in in-house R&D is even more critical

In-house R&D essential for hi-tech SMEs in internationalization – Korean cases

Firm	Products	Incumbent competitors	Tech acquisition sources	Performance
SunStar	Embroidery machinery	• Tajima (Japan)	• In-house R&D • Licensing from Belgian firms	Largest market share in the world market
HJC	Helmets	• Shoei (Japan) • Bieffe (Italy)	• OEM • In-house R&D	20% of world market share
JUSUNG ENGINEERING	Production equipment for semiconductor and flat panels	• AKT (U.S.)	• In-house R&D • Collaboration with universities	33% world market share

Observations

- HJC leveraged the learnings from their previous position as OEM parts supplier to further develop their own product and brand
- SunStar and Jusung leveraged other channels to expediate the technology acquisition process: licensing and collaboration with academia
- These cases suggest that tech transfer alone is not enough and in-house R&D must integral part to develop competitiveness

Source: Lee, *Economic catchup and technological leapfrogging*

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Misfit combined local capabilities across multiple countries in a unique way to fuel its growth

Leveraging international connections for acceleration: Misfit Wearables

About Misfit (now part of Fossil Group)

- Founded in 2011 by Sony Vu (CEO and President), Sridhar Lyengar and former Apple CEO John Sculley
- Offering: health tracker wearables
- Available in 20 countries (US, Canada Mexico, Brazil, UK, Germany, Italy, France, Switzerland, Spain, Sweden, Russia, Australia, China, Hong Kong, Japan, Singapore, Taiwan, South Korea and India)
- Acquired by Fossil Group at 260MUSD in November 2015

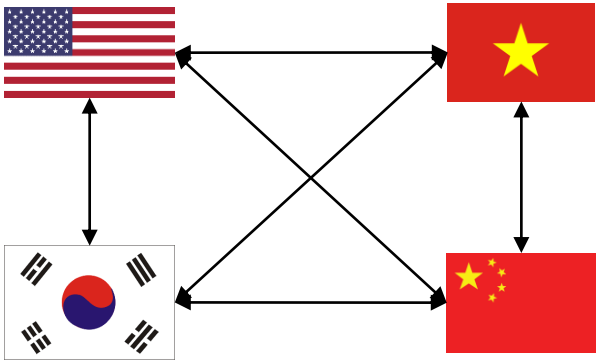
On organizing international operations in Vietnam*

Q: *What prompted the decision to have so many employees here [in Vietnam], aside from your background?*
Vu: *"So we have to get the best talent at the best price. So what we've done is optimized our hiring to be in places where we have an unfair competitive advantage"*

Vu: *"If you just come here with a mentality, I'm going to get cheap outsourced labor, then that's exactly what you're going to get…So we really give them [the Vietnamese staff] a lot of authority…And people rise up to the challenge"*

Leverage the best of each world to gain competitive advantages and scale internal capabilities development fast

- Product design
- Funding
- Marketing and sales



- Manufacturing

- Logistics and supply chain, operations, finance
- Customer service
- Data science and algorithm development
- Firmware engineering
- Graphic design

- Commercial product development

*Interview with Sonny Vu conducted by CNET in 2015
Source: Company website, press articles

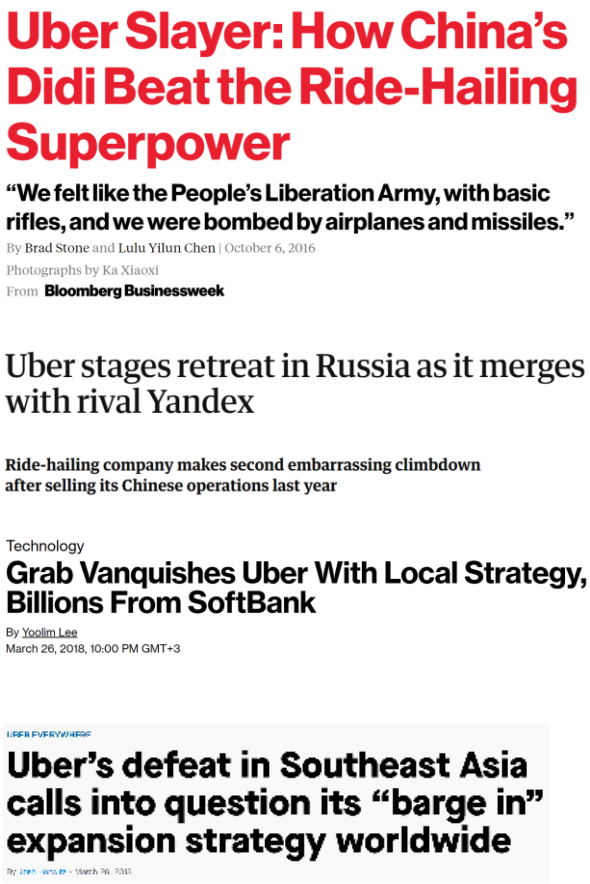
Uber struggles to scale in China, Russia and SEA illustrate that global success of digital services still require local know-how

Lessons learnt from some of Uber internationalization journey

UBER

Uber expansion timeline in selected markets

- Feb 2013 – Uber launched in Singapore, starting its expansion in South East Asia (SEA)
- Jul 2014 – Uber officially launched in China. Also in Russia
- August 2016 – Uber China merged into Didi Chuxing. Uber China would own 20% of the new entity. Didi to own $1bn share in Uber global
- July 2017 – Uber merged its operations in Russia, Azerbaijan, Belarus and Kazakhstan with Yandex. Uber would own 36.6% of the new entity
- March 2018 – Uber sold its operations in SEA for 27.5% stakes in Grab – a Singapore based competitor



Uber Slayer: How China's Didi Beat the Ride-Hailing Superpower

"We felt like the People's Liberation Army, with basic rifles, and we were bombed by airplanes and missiles."

By Brad Stone and Lulu Yilun Chen | October 6, 2016
Photographs by Ka Xiaoxi
From Bloomberg Businessweek

Uber stages retreat in Russia as it merges with rival Yandex

Ride-hailing company makes second embarrassing climbdown after selling its Chinese operations last year

Technology

Grab Vanquishes Uber With Local Strategy, Billions From SoftBank

By Yoolim Lee
March 26, 2018, 10:00 PM GMT+3

Uber's defeat in Southeast Asia calls into question its "barge in" expansion strategy worldwide

Source: Press clippings

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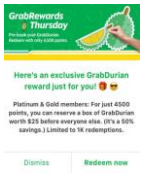
Grab focused on building ”segmented, localized and tailored service” to foster customer experience and loyalty

Grab localization strategy to succeed in regional expansion

South East Asia special characteristics	How Grab cater to local needs and tastes
• Traffic congestion make motorbike a more convenient and faster choice	• GrabBike was launched in 2014, two years ahead of Uber Motor
• Cash payments are still prevalent in many South East Asian cities	• Grab has traditionally accepted cash payments, long before Uber began to pilot it, first in India in 2015
• SEA is a fragmented region with different languages; many still do not speak English	• Grab launched GrabChat in 2016 with template messages and auto translation for quick communication between drivers and riders
• Durian is a special and popular local fruit in many parts of SEA	• Grab organized special campaigns/ redeem offer for special treats of high-quality durian



Source: Press clippings

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Without a dedicated entry strategy, many young companies fell to the pitfalls of relying on the “sales” approach only for short-term gain

Entry strategy approach versus “sales” approach to international markets

	”Sales” approach	Entry strategy approach (go-to-market system)
Time horizons	Short-run	Long-run (say, 3 to 5 years)
Target markets	No systematic selection	Selection based on analysis of markets/sales potential
Dominant objectives	Immediate sales	Build permanet market position
Resource commitment	Only enough to get immediate sales	What is necessary to gain permanet market position
Entry mode	No systematic choice	Systematic choice of most appropriate mode
New product development	Exclusively for home market	For both home and foreign markets
Product adoption	Only mandator adaptions (to meet legal/technical requirements) of domestic products	Adaption of domestic products to foreign buyers’ preferences, incomes, and use conditions
Channels	No effort to control	Effort to control to drive market objectives/goals
Price	Determined by domestic full cost with some ad hoc adjustments to specific sales situations	Determined by demand, competition, objectives, and other marketing policies, as well as cost
Promotion	Mainly confined to personal selling or left to middlemen	Advertising, sales promotion, and personal selling mix to achieve market objectives/goals

Without a go-to-market system with entry strategy for a product/target market, a company only has a “sales” approach

Source: Franklin R. Root, Entry strategies for international markets (2008)

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Young technology companies need to build internal R&D capabilities and leverage digital technologies and service platforms to drive growth

Tips on internationalization for technology SMEs

- ✗ Avoid the OEM trap – being complacent in playing the role of part manufacturers in the global value chain
- ✓ Invest in internal R&D to develop internationally competitive technology and products, and expansion abroad
- ✗ Over-rely on low-cost advantages without realizing other value-adding advantages from local resources
- ✓ Digital technologies make cross-border collaboration more easily, which young companies can leverage to build optimal teams
- ✗ Overly ambitious expansion plan, risk stretching themselves too thin over mass expansion without a clear go-to-market strategy/strategies
- ✓ Digital and service platforms make scaled internationalization more feasible for young companies with local resources – but local know-how essential for success

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Services can be more easily inserted into global economy, bypassing steps manufacturing went through in sequential internationalization

Internationalization model: manufacturing vs. service

Maunfacturing SME

Product based division of labor	Value chain based division of labor	Market based division of labor
• Company establishes manufacturing subsidiary in low wage country • Only low-value-added product manufacturing is relocated to the foreign subsidiary • Low wage country is not yet the market for the product • High-value-added product and R&D still remains in the home country headquarter	• Home country loses competitiveness in manufacturing even in the high-value-added products • Subsidiary undertakes the production of entire product line • The low wage country is not yet the market for locally produced products • Parent firm mainly handles R&D and marketing	• Low wage country market grows to have large enough in terms of purchasing power for product sales • Subsidiary now handles not only the production but also conducts domestic marketing activities • R&D for improving low-value-added or local-market-oriented products are conducted by the subsidiary

Service SME

Market based division of labor

- When entering the new market, service firms usually focus on attractiveness of the target country in terms of purchasing power for sales
- While some localization effort for sourcing may be needed, usual focus is on localizing the marketing

Source: Lee, *Economic catchup and technological leapfrogging*

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