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Technological Capabilities and Samsung’s International Production Strategies in East Asia

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April 1997
Declaration

This thesis is my own work except where otherwise indicated.

Young-Soo Kim
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Abstract

Between the late 1980s and the early 1990s, the international competitiveness of the Korean electronics end-product industry declined markedly. This occurred during a period of transition when there was a shift from export to international production. Major Korean electronics firms, newly established as MNCs, were under challenge. The new MNCs had to build technological capability to compete with established MNCs. New MNCs were under challenge in both domestic and global markets and they were confronted by increasing globalisation of production and research and development activities. No new Korean MNC felt the challenge more keenly than Samsung Electronics.

This study uses a case study approach to pose questions about which strategies were relevant to success in the international operations of new MNCs. Of particular interest is the way in which the subsidiaries of Samsung Electronics in the ASEAN region and China maintained their international competitive advantage, and whether their competitiveness can be sustained in the long run. A longitudinal case study approach is used to assess the strategic management, organisational and technology acquisition questions that arise in the establishment and expansion of international operations of new MNC in the electronics industry.

The first part of the study provides description of the relationship between the learning and development of Samsung’s technological capabilities and the nature of its foreign direct investment and competitive advantage during the 1970s, 80s and 90s. During the 1970s and 80s, Samsung mostly emphasised the development of ‘easy-to-imitate capabilities’ such as mass production capability, rather than ‘difficult-to-imitate capabilities’ such as design and product development and international management. Its mass production capability was the main motivation for foreign direct investment, but this is a temporary ownership advantage. The second part of the analysis assesses how Samsung’s subsidiaries in the ASEAN region and China established their competitiveness and it can be maintained. The capability to mass produce standardised components, achieving economies of scale, was the source of Samsung’s early competitive edge. It had weaknesses in the field of product change, strategic marketing and international management.
The global competitive environment has shifted from cost-based competition to product change capability-based competition. In this environment, international competitiveness depends on the improvement and transfer of technological capabilities between headquarters and subsidiaries.

Several factors determine success or failure in international production: the faster the production capability in a specific foreign location is earned, the better is the growth performance of a foreign subsidiary; an end-product subsidiary that quickly establishes with local component suppliers outperforms one that does not; the more proficient the international management capability gained through interactions in a similar foreign location, the better the performance of subsidiaries; and foreign subsidiaries with superior product-change capability outperform those with inferior capability.

Weakness in product change and international management capability is a major handicap in the maintenance of international competitiveness. This is in part attributable to home country policy. Restrictive policies on inward foreign direct investment discouraged wholly-owned foreign subsidiaries from operating in Korea. This prevented Korean firms, like Samsung, from learning difficult-to-imitate technological capabilities including design and product development skills. Korea’s regulation of outward foreign direct investment policy also discouraged firms from investing overseas, and ultimately inhibited domestic firms from gaining international production experience. This carries an important policy lesson for developing countries. A restrictive FDI policy, whether on inward or outward foreign direct investment, deprives domestic firms of the chance to learn difficult-to-imitate capabilities and inhibits the timely exploitation of short-lived advantages in international production — and is an inappropriate policy, unfavourable to sustaining the global competitive advantage of firms and nations.
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Glossary

AFTA  ASEAN Free Trade Area
ASEAN  Association of South East Asian Nations
ASIC  application specific integrated circuit
CAD  computer aided design
CAM  computer aided manufacturing
CATV  cable TV
CD  compact disc
CDP  compact disc player
CEO  chief executive officer
CDTs  computer display tubes
COMS  complementary metal oxide semiconductor
CPT  colour picture tubes
CRT  cathode ray tube
CTVs  colour televisions
D & D  design and development
Dongguan SEM  Dongguan Samsung Electro-Mechanics Co., Ltd
DRAM  dynamic random access memory
DYs  diode yokes
EAIK  Electronic Industry Association of Korea
EEPROM  electrically erasable programmable ROM
EPABX  electronics private automatic branch
EPROM  erasable programmable read only memory
EU  European Union
FBT  flyback transformer
FDI  foreign direct investment
GaAs  gallium arsenide
GE  General Electric
GSP  generalised system of preferences
HDD  hard disc drive
HDTV  high-definition television
HMS  Harris Microwave Semiconductor
HP  Hewlett Packard
Huizhou SEC  Huizhou Samsung Electronics Co., Ltd
IC  integrated circuit
ISDN  integrated services digital network
KIST  Korea Institute of Science and Technology
KSC  Korea Semiconductor Co.
KTC  Korea Telecommunication company
LAN  local area network
LCD  liquid crystal display
LDP  laser disc player
LED  light emitting diode
M&A  merge and acquisition
MESA  Matsushita Electronics Singapore
MNCs  multinational corporations
NAFTA  North America Free Trade Agreement
NEG  Nippon Electric Glass
NICs  newly industrialised countries
OEM  original equipment manufacturer
PBX  private branch exchange
PCB  printed circuit board
R & D  research and development
RHQ  regional headquarters
SAI Tianjin  Tianjin Samsung Aerospace Industry Co., Ltd
ROM  read only memory
SATI  Samsung Advanced Technology Institute
SBU  strategic business units
SC Malaysia  Samsung Corning Malaysia Sdn Bhd
SC  Samsung Corning Co., Ltd
SDS  Samsung Data System Co., Ltd
SEA  Samsung Electronics America Inc.
SEC  Samsung Electronics Co., Ltd
SED  Samsung Electron-Devices Co., Ltd
SED Malaysia: Samsung Electron-Devices-Malaysia Sdn Bhd
SEDM  Samsung Electron-Device Malaysia Sdn Bhd.
SEM  Samsung Electro-Mechanics Co., Ltd
SEMA  Samsung Electronics Malaysia Sdn., Bhd
SEMM  Samsung Electronics Monthly Magazine
SEM Thailand  Samsung Electro-Mechanics-Thailand Co., Ltd
SEPI  Samsung Electronics Portugal Inc.
Shandong SEC  Shandong Samsung Telecommunication Co., Ltd
SISA  Samsung Information Systems America
SME  PT Samsung Metodata Electronics
SMI  PT Samsung Maspion Indonesia
SMM  Samsung Monthly Magazine
SRAM  static random access memory
SSA  Samsung Software America
SSESC  Samsung Semiconductor Electronics Suzhou Co., Ltd
SST  Samsung Semiconductor and Telecommunication Co., Ltd
Suzhou SEC  Suzhou SEC Ltd
TBC  Tianjin Broadcasting & Communications
TDX  time division exchange
TFT  thin film transistor
Tianjin SC  Tianjin Samsung Corning Co., Ltd
TSE  Thai-Samsung Electronics Co., Ltd
TSEC  Tianjin Samsung Electronics Co., Ltd
Tianjin SEM  Tianjin Samsung Electro-Mechanics Co., Ltd
TTSEC  Tianjin Tongguang Samsung Electronics Co., Ltd
VCRs  video cassette recorders
VER  voluntary export restraint