Technology for Development: Ten True Stories Revealing the Complexity of Replicating South Korean Success

M. Nawaz Sharif

Former Professor of AIT, Bangkok; GWU, JHU and UMUC, USA

Version of record first published: 15 December 2020

To cite this article: Sharif, M. N. (2020). Technology for Development: Ten True Stories Revealing the Complexity of Replicating South Korean Success. Journal of STI Policy and Management, 5(2), 95–103.

To link to this article: http://dx.doi.org/10.14203/STIPM.2020.287
We are pleased to present to the readers with the fifth issue of the Journal of Science, Technology and Innovation Policy and Management. In this issue, we continue to publish the results of interdisciplinary scientific researches in various aspects of STI Policy and Management. This issue, prior issues, and other resources are available at www.stipmjournal.org.

We thank the reviewers and editorial boards for taking their precious time to ensure the quality of the articles through the double-blind peer review process. The seven articles in this volume cover a wide range of topics in STI policy and R&D governance and management. In this issue, we introduce a special topic on Original Concept Formation. This is a new focus and scope of STI Policy and Management Journal. A concept formation in technology policy (TP) and management of technology (MOT), including proven soft technology concept based on rigorous data, cumulatively published references, and long experiences in the academic sphere. The original concept formation should deal with soft technology problems, policy context for problem-solving, concept formation, and its effective implementation.

M. Nawaz Sharif presents an original concept formation entitled Technology for Development: Ten True Stories Revealing the Complexity of Replicating South Korean Success. The essay comprises ten true stories presented to highlight personally observed problems encountered by Asian developing country leadership who tried to replicate South Korean success in fostering technology innovation induced sustainable economic growth strategy without paying robust attention to the crucial role of creating an “innovation climate/culture” as a necessary foundation for myriad development efforts.

The subsequent articles revealed research findings on the various issue of STI policy and R&D governance and management. First article is presented by Erwiza Erman entitled Changing Stages of System Innovation at the Ombilin’s Coal Mines of Sawahlunto: From Ghost Town to World Heritage. This paper examines system innovation, a transition from one socio-technical system to another by transforming the historical and cultural area into a world heritage city. The objective of this study is to reconstruct the changing stages of system innovation in achieving the World Heritage status at the Ombilin coal mines site of Sawahlunto.

The second article is composed by Rachmini Saparita and Savitri Dyah, entitled Mechanism of Implementing Technology in the Community of Eastern Indonesia (Case Study in Belu Regency, Nusa Tenggara Timur Province). This paper focuses on the mechanism of technology implementation to increase society’s welfare. The study also evaluated technology implementation activities in the period 2003 to 2019, using meta-synthesis. The analysis found that there are five types of technology transfer mechanisms carried out by researchers at LIPI.
The third article is composed by Budi Triyono, Ria Hardiyati, and Aditya Wisnu Pradana, entitled *Lack of Contribution of the Indonesian R&D Program to Economic Sector: Learning from the RPJMN Implementation*. Through a review of the National Medium-Term Development Plan (RPJMN) documents on the S&T Sector period of 2015–2019, this article attempts to analyze various obstacles related to the minimal contribution of Indonesian R&D Programs in supporting Indonesia's economic sector and national competitiveness.

Wati Hermawati presents an article entitled *Key Success Factors in Managing and Implementing Public Funded R&D Projects in Indonesia*. In this paper, she mentioned that the role of public-funded R&D institutions in supporting innovation and economic performance of MSMEs (micro, small and medium enterprises) is still very small. Therefore, the success factors in managing and implementing R&D projects at R&D institutions should be identified, particularly in providing solution for MSMEs' problems. Through the two case studies, this article provides key success factors and lessons learned to improve R&D project activities at PRCs.

The fifth article is presented by Trina Fizzanty, Kusnandar, Sigit Setiawan, Radot Manalu, and Dini Oktaviyanti, entitled *The International Research Collaboration, Learning and Promoting Innovation Capability in Indonesia Medical Sectors*. This article presents the case of eight international collaborative research projects in medical research in Indonesia. The research found that International research collaboration has opened the opportunity for Indonesian researchers to learn and upgrade their capability and contribute to the scientific arena. However, none of international research projects reached the commercialization stage yet, but some of which were at the beginning of clinical trial stage.

Finally, Budi Harsanto presents an article entitled *Eco-innovation Research in Indonesia: A Systematic Review and Future Directions*. The article analyzes the recent development of eco-innovation research in Indonesia and provides some potential avenues for future research. The analysis was carried out using Systematic Literature Review (SLR) techniques to synthesize knowledge development of a scientific field in a structured, transparent, and reliable manner.

The editor of STIPM Journal are dedicated to working with scholars in existing and emerging STI issues and produce high-quality papers to expand knowledge in the field of STI Policy and R&D Governance and Management. We believe that all the papers published in this issue will greatly influence on the STI Policy and Management for Sustainable Development.

The STIPM Journal is indexed by Google Scholar, ISJD, IPI, DOAJ, BASE, SINTA, and OCLC World Cat. This makes the journal dissemination wider.

The editor-in-chief acknowledge and are very grateful to the authors, the editorial board, the section editors, the designer, the staff of the LIPI Press Publishing Office, and everyone who has contributed to the publication of the STIPM journal. We are also very grateful to our future readers. By inviting the readers to publish your research results articles in this journal, we believe in the meaningfulness and future collaboration as well as to provide a higher scientific platform for the authors and the readers, with a comprehensive overview of the most recent STI Policy and Management research and development at the national, regional, and international level.

Happy New Year 2021 to all of you!

Jakarta, 15 December 2020

Editor-In-Chief
LIST OF CONTENTS

Technology for Development: Ten True Stories Revealing the Complexity of Replicating South Korean Success

M. Nawaz Sharif ............................................................................................................................. 95–103

Changing Stages of System Innovation at the Ombilin’s Coal Mines of Sawahlunto: From Ghost Town to World Heritage

Erwiza Erman ................................................................................................................................ 105–119

Mechanism of Implementing Technology in the Community of Eastern Indonesia (Case Study in Belu Regency– Nusa Tenggara Timur Province)

Rachmini Saparita and Savitri Dyah ........................................................................................... 121–136

The Gap between Program Planning and Implementation: The Case of R&D Program in Indonesian RPJMN

Budi Triyono, Ria Hardiyati, and Aditya Wisnu Pradana .............................................................. 137–146

Key Success Factors in Managing and Implementing Public Funded R&D Projects in Indonesia

Wati Hermawati ............................................................................................................................... 147–160

The International Research Collaboration, Learning and Promoting Innovation Capability in Indonesia Medical Sectors

Trina Fizzanty, Kusnandar, Sigit Setiawan, Radot Manalu, and Dini Oktaviyanti .............. 161–178

Eco-Innovation Research in Indonesia: A Systematic Review and Future Directions

Budi Harsanto ................................................................................................................................ 179–191
Technology for Development: Ten True Stories Revealing the Complexity of Replicating South Korean Success

M. Nawaz Sharif*  
Former Professor of AIT, Bangkok; GWU, JHU and UMUC, USA

ARTICLE INFO

This essay comprises ten true stories presented to highlight personally observed problems encountered by Asian developing country leadership who tried to replicate South Korean success in fostering technology innovation induced sustainable economic growth strategy without paying robust attention to the crucial role of creating an “innovation climate/culture” as necessary foundation for myriad development efforts. It seems that the country leadership focused too much on the model mechanics, but did not have rigorous concern for the underlying principles of those models. To reveal validity of this assertion, the author presents ten true stories that he personally observed, i.e., (1) true story on suspicion and disrespect; (2) true story on mindset constraint; (3) true story on caring for the weak; (4) true story of super achievers; (5) true story on failure to follow through; (6) true story on “turn right” into the river; (7) true story of motherly protection; (8) true story of supreme commitment; (9) true story of KIST and MOST mirages; and (10) true story on plan implementation.

©2020 P2KMI-LIPI All rights reserved

I. INTRODUCTORY NOTE FROM EDITOR

The editors are please to publish this paper on “Ten True Stories” by Prof Dr. Nawaz Sharif (Former Chair Professor and Vice-President for Academic Affairs of the Asian Institute of Technology and Former Director of the UN-ESCAP’s Asian and Pacific Center for Transfer of Technology) in his preferred format of having a dialogue goal of utilizing “viewgraphs” as mind-share discussion media. Generally, each viewgraph presented by the author is supposed to be a self-contained single-page chart (of idea-boxes, factual-texts and positional-hierarchy connectors), representing one selected technology management related conceptual framework or one practical application oriented example in a real-world global enterprise operations setting. From the list of published documents on the subject of “Technology for Development” (see last page of this paper), the readers can visualize the author’s two decades of subject matter related studies and programs conducted in the Asian region.
II. TEN TRUE STORIES ON TECHNOLOGY FOR DEVELOPMENT

Ten True Stories on Complexity of Replication South Korean Success

Figure 1. Technology for Development: Promising Roadmap and Problematic Terrain

Figure 2. The Context for the Ten True Stories Presented Herein
Figure 3. Viewgraph of True Story on Suspicion and Disrespect

Figure 4. Viewgraph of True Story of Mindset Constraint
**Figure 5.** Viewgraph of True Story on Caring for The Weak

**Figure 6.** Viewgraph of True Story of Super Achievers
Figure 7. Viewgraph of True Story on Failure to Follow Through

Figure 8. Viewgraph of True Story on “Turn Right” into The River
Figure 9. Viewgraph of True Story of Motherly Protection

Figure 10. Viewgraph of True Story of Supreme Commitment
Figure 11. Viewgraph of True Story of KIST and MOST Mirages

Figure 12. Viewgraph of True Story on Plan Implementation
III. CONCLUDING NOTE

Though the stories are dated, since similar situation may be prevailing in many other parts of the world, by publishing this essay it is hoped that the lessons learned from the stories would be useful for all developing countries.

The author has spent over 40 years of his professional life in Asian developing countries (Bangladesh, India, Indonesia, South Korea, Malaysia, Pakistan, Philippines, Thailand, and Sri Lanka) and 20 years in the United States of America. Therefore, claiming to have the heart of a developing country citizen, the author finally presenting his earnest request “to shun four universal lies” as depicted in the following viewgraph below.
REFERENCES

Sharif, M.N. (Ed.). (1984). Technology for development. United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP), Tokyo.

Sharif, M.N. (Ed., Trans.). (1984). Industrial research in less developed countries (original in Korean language by H.S. Choi). UN-ESCAP, Regional Centre for Technology Transfer, Bangalore.

Sharif, M.N. (Ed., Trans.). (1985). Starting from zero: Transformation of Japan by science and technology (original in Japanese language by T. Nakayama). UN-ESCAP, Asian and Pacific Center for Transfer of Technology, Bangalore.

Sharif, M.N. (1986). Measurement of technology for national development. Technological Forecasting and Social Change, 29(2), 119–171.

Sharif, M.N. (Ed.). (1986). Technology policy formulation and planning: A reference manual. UN-ESCAP, Asian and Pacific Center for Transfer of Technology, Bangalore.

Sharif, M.N. (Ed.). (1987). Technology policies and planning: Country studies-Australia, Bangladesh, China, India, Indonesia, Japan, South Korea, Malaysia, Nepal, Pakistan, Papua New Guinea, Singapore, Sri Lanka, Thailand, and Vietnam. UN-ESCAP, Asian and Pacific Center for Transfer of Technology, Bangalore.

Sharif, M.N. (1988). Technological considerations for national planning. Technological Forecasting and Social Change, 30(4), 361–382.

Sharif, M.N. (Guest Ed.). (1987). Technological capabilities assessment in developing countries (and co-authors of six paper: A framework for technology based national planning; Components of technology for resources transformation; Measurements of technology content added; Measurement of level and gap of technological development; Evaluation of national technological capabilities; and Assessment of technology climate in two countries). Technological Forecasting and Social Change, 32(1), 1–118.

Sharif, M.N. (1988). Problems, issues, and strategies for S&T policy analysis. Science and Public Policy, 15(4), 195–216.

Sharif, M.N. (Ed.). (1988). Technology policies and planning: A regional report. UN-ESCAP, Asian and Pacific Center for Transfer of Technology, Bangalore.

Sharif, M.N. (1988). Basis for techno-economic policy analysis. Science and Public Policy, 15(4), 217–229.

Sharif, M.N. (Ed.). (1989). Technology atlas project reports: A framework for technology based development planning (six volumes). UN-ESCAP, Bangkok.

Sharif, M.N. (Ed.). (1989). Technology for development: Can you afford to be a bystander? UN-ESCAP, Asian and Pacific Centre for Transfer of Technology, Bangalore.

Sharif, M.N. (Ed., Trans.). (1989). Springboard measures for becoming highly industrialized society (original in Korean language by H.S. Choi). UN-ESCAP, Asian and Pacific Centre for Transfer of Technology, Bangalore.

Sharif, M.N. (1989). Technological leapfrogging: Implications for developing countries. Technological Forecasting and Social Change, 36(1,2), 201–208.

Sharif, M.N. (1990). Industrial technology development: A national plan of action. Ministry of Science, Technology and the Environment Malaysia, Kuala Lumpur (Member of Adhoc Technical Secretariat, Government of Malaysia).

Sharif, M.N. (1993). Science and technology management information system for Indonesia. UNDP-UNESCO Project Reports, Jakarta.

Sharif, M.N. (1993). Industrial technology indicator manual (six volumes). UNDP-UNESCO Project on Science and Technology Management Information System, Jakarta.

Sharif, M.N. (1993). User’s guide for technology management information system (Vol. 1). UNESCO-LIPI/Indonesian Institute of Sciences, Jakarta.

Sharif, M.N. (Ed.). (1993). Exploring the role of technological consideration in the ADB financed projects. ADP Technical Assistance Project Report on Study of Technology Transfer and Development in Developing Member Countries (Bangladesh, China, Pakistan and the Philippines), Manila.

Sharif, M.N. (1994). Technology change management: Imperatives for developing economics. Technological Forecasting and Social Change, 47(1), 103–114.