



A MACRO-LEVEL ASSESSMENT OF THE SCIENCE AND TECHNOLOGY CAPABILITIES OF THAILAND

by

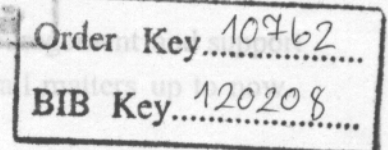
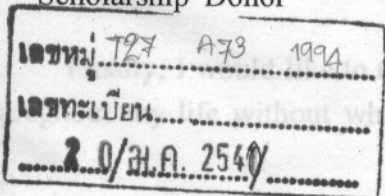
Areewan Haorangsi

A research study submitted in partial fulfilment of the requirement for the degree of Master of Business Administration.

Examination Committee : Dr. K. Ramanathan (Chairman)
Prof. M. N. Sharif
Dr. John C. S. Tang

Areewan Haorangsi

Nationality : Thai
Previous Degree : Bachelor of Political Sciences
Chulalongkorn University
Bangkok, Thailand
Scholarship Donor : Royal Thai Government



Asian Institute of Technology
Bangkok, Thailand

April, 1994

RSPR - SM - 94 - 28

ABSTRACT

Impressive economic growth performance of Thailand in recent years has been achieved through the substantial contribution of the industrial sector especially through the exports of manufactured goods. However, the depletion of natural resources and the rapid changes in the world political situation, especially with respect to globalization of manufacturing and international trade, Thailand can no longer rely on its traditional advantages of abundant resources and cheap labor. The country has to establish a new comparative advantage based on the pragmatic, imaginative and effective use of science and technology to maintain its competitiveness in the globalized and interdependent world economy. Thus, there exists the need to carefully examine to what extent S&T capability of Thailand is developed in order to take advantage of changing global trends and guard against the dangers that they pose.

1.1 Statement of the Problem 2

This study attempts to assess the technological capability of a country at the macrolevel by looking at three main areas which have a direct bearing on S&T capabilities namely the technological capability of industry, the effectiveness of national research and development institutions, and the supportiveness of the national S&T human resource development system, viewed in conjunction with the national S&T institutional framework and S&T policies. In doing so, the study has developed a simple framework for studying technological capability development at a macrolevel. An attempt is made to operationalize the framework using Thailand as a case study. Major conclusions on the main areas influencing technological capability development are drawn and the major recommendation that is made is in relation to the revitalization of the existing S&T framework of the study.

2.2 Technological Capability of Industry 12

2.3 Evaluation Research and Development Institutions 18

2.3.1 Definition of Research and Development 18

2.3.2 Classification of Research and Development Institutes 19

2.3.3 Indicators for Evaluating R&D Institutional Performance 20

2.4 Issues in Science and Technology Human Resources Development 23

2.5 The Role of Science and Technology Support Institutions 24

2.6 Science and Technology Policies 25

2.6.1 Scope and Content of Science and Technology Policies 26

2.6.2 Classification of S&T Policy Instruments 30

2.6.3 Science and Technology Plans 31