

**THE SUPERVISORY IMPACT OF TECHNOLOGY
ON SEACEN FINANCIAL INSTITUTIONS:
ISSUES AND CHALLENGES**

Cicilia A. Harun



**The South East Asian Central Banks (SEACEN)
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Tel. No.: (603) 7958-5600
Fax No.: (603) 7957-4616
Telex: MA 30201
Cable: SEACEN Kuala Lumpur
Website: <http://www.seacen.org>

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FOREWORD

Given the increasing intensity of IT implementation by financial institutions in most of the SEACEN member countries, this project is considered timely to address the relevant issues and challenges faced by all SEACEN member countries. The objective of the project is to identify concerns in the IT practices of financial institutions in the region, emphasising on the practices by banking institutions. The level of IT implementation by financial institutions in the region varies from country to country. The research project addresses the most common concerns, elaborates on the different conditions and suggests policy measures to mitigate IT risks and finally, to highlight IT practices by financial institutions in the region to level the playing field.

This research project on *The Supervisory Impact of Technology Implementation on SEACEN Financial Institutions: Issues and Challenges* is a collaborative effort by The SEACEN Centre and a team of ten country researchers representing nine SEACEN member central banks, namely, Ministry of Finance of Brunei Darussalam, National Bank of Cambodia, Bank Indonesia, The Bank of Mongolia, Central Bank of Myanmar, Nepal Rastra Bank, Central Bank of Sri Lanka, Central Bank of the Republic of China (Taiwan) and State Bank of Vietnam. Reserve Bank of Fiji, Bank Negara Malaysia, Bangko Sentral ng Pilipinas, Monetary Authority of Singapore, and Bank of Thailand contributed input in form of responses to the survey questionnaire. The heterogeneity of IT implementation by financial institutions in the region is reflected in the country papers authored by the country researchers. This suggests that there need to be careful policy prescriptions in enforcing IT standards in the region. The integrative report provides the common thread that will lead to the overall conditions in the region. The research project does not attempt to provide a binding standardisation of IT implementation by financial institutions in the region. However, it addresses the issues and challenges in the provision of IT infrastructure and the design of IT supervisory framework to mitigate the potential problems involving the IT implementation. The international standards and best practices described in the integrative report as well as the practices in some of the more advanced countries in the region can be a yard stick for SEACEN member countries to improve on

their IT supervisory practices in order to bring IT implementation by SEACEN financial institutions to international standards.

The study is divided into two parts. Part I is the integrative report authored by Dr. Cicilia A. Harun, Visiting Research Economist at The SEACEN Centre who is currently a researcher at the Financial System Stability Bureau, Directorate of Banking Research and Regulations at Bank Indonesia. Dr. Harun served as the Project Leader as well as Country Researcher for Indonesia. Part II consists of nine country papers written by the country researchers from the nine members of SEACEN countries participating in the project.

The SEACEN Centre wishes to thank Dr. Harun for her efforts as the Project Leader and Country Researcher and also the Country Researchers from the participating SEACEN member central banks for their contributions to the research project, namely, Mr. Mohd. Khairul Zaki Hj Mohidin, System Analyst, Information Technology and State Store Department, Ministry of Finance, Brunei Darussalam; Mrs. Hay Livine and Mr. Sim Sothearith, both Section Chiefs of Economic Research Department, National Bank of Cambodia; Mrs. Tsolmon Baasanjav, Supervisor, Supervision Department, The Bank of Mongolia; Daw Khin Cho Cho, Assistant Director, Bank Supervision Department, Central Bank of Myanmar; Mr. Shiba Raj Shrestha, Director, Financial Institution Supervision Department, Nepal Rastra Bank; Mr. G K K Gamage, Senior Assistant Director, Bank Supervision Department, Central Bank of Sri Lanka; Mr. Lee Yi Chang, Senior Auditor, Department of Financial Inspection, Central Bank of the Republic of China (Taiwan) and Mr. Phan Thai Dung, Chief of Division, Informatics Technology Department, State Bank of Vietnam. The Centre also gratefully acknowledges the valuable comments and suggestions of Dr. Haibin Zhu, Senior Economist, Representative Office for Asia and the Pacific, Bank for International Settlements, on the final draft of this study.

The Centre also wishes to acknowledge the support of The SEACEN Centre's staff in completing this study. The views, conclusions and recommendations expressed in this Report are those of the authors and do not necessarily reflect those of The SEACEN Centre or its member central banks/monetary authorities.

Dr. A.G. Karunasena
Executive Director
The SEACEN Centre
June 2009

Executive Summary

The development of financial markets cannot be isolated from the influence of technology. Technology, especially information technology (IT), plays a dual role in the financial field - as the engine of development of financial products and as the engine of financial institution operations. The operations of financial institutions in SEACEN countries involving the use of IT take on the second role. The more advanced SEACEN countries can actually compete with the world leaders in IT implementation by financial institutions. However, in terms of the second role of IT, SEACEN countries are still following the lead of the developed countries.

This research project is aimed at providing a comparative study on the IT implementation within SEACEN financial sectors, including its supervisory impacts, issues and challenges. The project also serves as a documentation of the development of IT implementation by financial institutions in the SEACEN region. Since most central banks in the region are the authorities for the supervision of banking systems and not of non-bank financial institutions, the discussions on financial institutions pertain to banks. The project addresses the international best practices in IT implementation, cross-country comparison regarding IT implementation by financial institutions, the supervisory impacts, and the IT supervisory framework.

SEACEN countries have different levels of IT implementation and IT supervisory frameworks. The country papers and survey results show that there are three different levels of IT implementation in the SEACEN countries. They are: 1) Developed IT implementation and established IT supervisory framework; 2) Early stage of IT implementation with less-established IT supervisory framework; and 3) Less-developed IT implementation. For each level of implementation, countries face different issues and challenges. Wherever IT implementation has become an important part of financial institution operations and management, the SEACEN member central banks consider IT supervision as an integral part of the overall financial institution supervisory framework. However, since there is cross-country heterogeneity of IT implementation and IT supervisory framework, suggesting a minimum requirement for IT implementation for institutions and a model IT supervisory framework is very difficult.

The research project also addresses some issues and challenges faced by the countries in the region in terms of mitigating IT risks and bringing IT implementation by financial institutions in the region to a level playing field according to international best practices. The issues and challenges suggest the need to increase cooperation among the SEACEN member countries to increase IT awareness, implement good IT governance through establishing IT supervisory frameworks which conform to international best practices, increase knowledge sharing and training programmes in order to speed up the spill-over effects from the more advanced countries in the region.

