

INTELLIGENT AUTOMATED SMALL AND MEDIUM ENTERPRISE (SME)
LOAN APPLICATION PROCESSING SYSTEM USING
NEURO-CBR APPROACH

A project submitted to Dean of Research and Postgraduate Studies Office in partial
Fulfillment of the requirement for the degree
Master of Science (Intelligent System)
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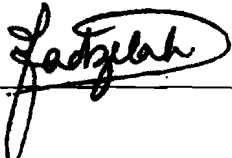
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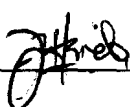
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ABSTRAK (BAHASA MALAYSIA)

Membina sebuah kumpulan perusahaan kecil dan sederhana (PKS) yang kompetitif dan pelbagai merupakan tema utama untuk mencapai pertumbuhan ekonomi secara berterusan. PKS adalah penting untuk proses pertumbuhan ekonomi dan memainkan peranan penting dalam keseluruhan rangkaian pembuatan negara. Fokus kajian ini adalah untuk membuat model sokongan keputusan automatik untuk sektor PKS yang dapat digunakan oleh pihak pengurusan bank SME untuk mempercepatkan proses permohonan pinjaman kewangan. Kajian ini mencadangkan sebuah sistem pintar secara automatik untuk sistem pemprosesan permohonan pinjaman kewangan PKS (i-SMESs) yang merupakan sistem aplikasi berasaskan web untuk pemprosesan dan pemantauan aplikasi pinjaman kewangan PKS menggunakan teknik “Hybrid Intelligent” yang menggabungkan “Neural Network” dan “Case-based Reasoning” yang dinamakan “NeuroCBR”. i-SMEs digunakan untuk menyokong pengurusan Bank SME dalam mempercepatkan masa pembuatan keputusan dan juga mengurangkan kos operasi. i-SMEs mampu untuk mengklasifikasikan target pasaran PKS kepada tiga kumpulan yang berlainan iaitu MIKRO, SEDERHANA dan KECIL dan juga mampu untuk mempercepatkan proses pra-kelulusan pinjaman kewangan. i-SMEs juga berupaya untuk mengubah corak keputusan yang dijana kepada pelan tindakan yang mampu membantu Bank SME.

Kata Kunci: Sistem Kepintaran Automatik, Pemprosesan kemudahan pinjaman kewangan PKS, Kepintaran Buatan Hibrid, Rangkaian Neural, ‘Case-based Reasoning’.

ABSTRACT (ENGLISH)

Developing a group of diverse and competitive small and medium enterprises (SMEs) is a central theme towards achieving sustainable economic growth. SMEs are crucial to the economic growth process and play an important role in the country's overall production network. The focus of this study is to develop an automated decision support model for SMEs sector that can be used by the management to accelerate the loan application processing. This study proposed an intelligent automated SME loan application processing system (i-SMEs) that is a web based application system for processing and monitoring SME applications using Hybrid Intelligent technique which integrate Neural Network and Case-based Reasoning namely NeuroCBR. i-SMEs is used to assist SME bank management in order to improve decision making time processing as well as operational cost. i-SMEs be able to classify SME market segment into three distinctive groups that are MICRO, MEDIUM and SMALL and also can make a pre-approval loan processing faster. It is possible to transform the patterns generated from i-SME into actionable plans that are likely to help the SME Bank .

Keywords: Intelligent automated system, SME loan application processing,

Hybrid Artificial Intelligence, Neural Network, Case-based Reasoning.

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CHAPTER 1

INTRODUCTION

This chapter discusses the background of the study that consists of several sub-parts about the scope, significance and the problem statement of this study. These include overview of Small and Medium Enterprise (SME) Corporation and SME Bank management definitions in Malaysia. In this chapter also describes the framework of SME requirements.

1.1 Overview of the study

Developing a group of diverse and competitive small and medium enterprises (SMEs) is a central theme towards achieving sustainable economic growth. SMEs are crucial to the economic growth process and play an important role in the country's overall production network. SMEs have the potential to contribute substantially to the economy and can provide a strong foundation for the growth of new industries as well as strengthening existing ones, for Malaysia's future development.

SME Corp. Malaysia is the Secretariat to the National SME Development Council (NSDC). In 2005, the National SME Development Council (NSDC) approved the use of common definitions for SMEs in the manufacturing, manufacturing-related services, primary agriculture and services sectors.

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