

**FACTORS INFLUENCING ELECTRONIC DATA
INTERCHANGE (EDI) USAGE IN PORT RELATED
INDUSTRIES IN NORTHERN MALAYSIA**

A thesis submitted to the Graduate School in partial **fulfilment** of the
requirements for the degree of Masters of Science in
Information Technology,
Universiti Utara Malaysia

by

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M.Sc. IT. 2000

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ABSTRAK (BAHASA MALAYSIA)

Perkembangan terkini dalam penggunaan teknologi **pemindahan** data elektronik (singkatannya EDI) khususnya di **pelabuhan-pelabuhan** telah melibatkan pelbagai faedah. Kajian awal ini cuba memfokus terbadap pembangunan EDI dalam konteks ini. Secara globalnya, pelabuhan memainkan peranan yang **amat** penting dalam perdagangan maritim. Ia boleh diibaratkan sebagai **katalis** yang mampu menentukan pembangunan ekonomi **sesebuah** negara. Justeru itu, sememangnya ia adalah suatu perusahaan yang dianggap **sangat** penting.

Melalui perkembangan yang pesat, maka kebanyakan pelabuhan memerlukan **corak** **pengurusan** yang **lebih** cekap dan **efisien**. Cabaran **baru** dalam **operasi** aktiviti pelabuhan **bagi** memastikan pemunggahan barangan kargo yang **pantas** dan prosedur pentadbiran yang **moden** merupakan isu kritikai yang **perlu** diberi perhatian.

Dengan demikian, kajian ini menumpu terhadap penggunaan EDI yang **kini** telah diterapkan dalam kebanyakan organisasi yang **berurusan** dengan pelabuhan. Bagi menggalakkan penggunaan EDT, prasarana yang sesuai dan **positif** diperlukan. Selain itu, **turut** menjadi objektif kajian **bagi** menentukan **halangan** yang mungkin dihadapi dalam **usaha** implementasi EDI.

Antara **faktor** yang dikenalpasti mempunyai hubungan **positif** terhadap penggunaan EDI termasuklah Tekanan Persaingan ('competitive pressure'), tekanan produktiviti ('productivity pressure') dan **aspek** sekuriti. Yang agak menghairankan ialah faktor-faktor seperti faktor berkaitan dengan pihak **pengurusan** dan pentadbir, pembekal dan **faktor** ekonomi tidak menunjukkan hubungan yang **signifikan** dalam mempengaruhi penggunaan EDI. Hasil penemuan ini mencadangkan agar pihak pentadbir dan **pengurus** perlu lebih prihatin dalam pelaksanaan EDI. Pembekal juga seharusnya memainkan peranan yang **lebih** agresif dalam pelaksanaan sistem ini. **Turut** **disarankan** ialah latihan dan pendedahan terhadap pengetahuan **tentang** faedah EDI kepada bukan sahaja pekerja tetapi **juga** pihak **pengurusan**. Melalui usaha-usaba ini berserta dengan insentif **dan** prasarana yang sedia **ada**, sistem EDI akan terlaksana secara **lebih** total oleh kira-kira 200 **organisasi** yang berkaitan dengan aktiviti pelabuhan.

ABSTRACT

Recent developments in Electronic Data Interchange (EDI) usage for container terminals examine the various benefits of its applications in the port environment. This report provides an early analysis of EDT developments in the area. In a global context, ports are **often** very important maritime business centres where the most important commercial actors operate. Hence, ports are very important information centres. It can be either the driving force or the brakes of regional and **local** economies. It has been recognized as catalysts to spur the economic prosperity of a nation. Thereby, ports must be considered as a logistic and commercial platform.

The maritime and port scenario is a fast growing one, **especially** in the areas of **containerised** cargo and short sea shipping. Ports are point of arrival and departure for this type of **traffic** and many of them are not yet able to match an acceptable operation performance. New challenges such as a need of quick loading/unloading operations and extremely fast administrative procedures are critical issues to look upon.

It is with these reasons that this study was conducted with the primary objective to identify factors that would contribute towards encouraging EDI usage besides cushioning its barriers. However the scope of the study is restricted to those port related organizations in the Northern Region of Malaysia only.

Among the key factors identified in this study that indicate a positive association to EDI usage are Competitive Pressure, Productivity Pressure, and Security aspects. **Surprisingly**, top-level support, vendors related factors and economic factors which were tested was found to have no significant contribution to EDT usage. However, a closer look at the mean value showed that generally **thereis** a need to gain support from the top management and more aggressive promotion by vendors in order to ensure a more successful implementation. This study suggested that vendors could play an active role in providing the expertise. In addition, understanding of information **technology** is important for successful implementation. For this, adequate training for both employees and management should be encouraged. Another suggestion is to introduce special scheme or programme in the form of incentives, grants, subsidies, etc. to all the players involved in the promotion of information technology such as EDI in the 200 odd port related organizations.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my supervisor, Mr. Mohd. Khairuddin for his invaluable guidance and advice which contributed substantially towards the completion of this study. My gratitude is also extended to the academic staff of the School of Information Technology, Universiti Utara Malaysia for all assistance extended.

I would also like to thank my fellow colleagues for their support, assistance and encouragement. Also a heartfelt thanks to all the participating respondents who made time despite a busy work schedule to complete and return the questionnaires for the study.

Finally, I express a deep sense of gratitude to all my immediate family members. Most of all, I would like to thank my better half Emily Wong Miew Kit for her understanding, patience and for sharing the joys and burdens of the Information Technology Masters program with me.

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ABBREVIATION

EDIM – Electronic Data Interchange Malaysia Sendirian Berhad

EFT - Electronic Fund Transfer

FCZ - Free Commercial Zone

IPDM - Institute of Physical Distribution Management

IT – Information Technology

MDA - Multiple Discriminant Analysis

MRA - Multiple Regression Analysis

NCC - National Computing Centre

PKCS - Port Klang Community System

POC - point-of-care

SMK - Sistem Maklumat Kastam

SPSS – Statistical Package for Social Sciences

Penang Freight Forwarding Association (PFFA)

CHAPTER 1.0

INTRODUCTION

1.0 Overview of EDI Usage

Information technology plays a major role in Malaysia's dynamic industrialization. In the true spirit of 'Malaysia incorporated' promulgated by the Prime Minister Dr. Mahathir Mohammad, the public and private sectors have been very supportive of IT (Information Technology) developments in Malaysia. Close public and private sector cooperation has also underlined several key infrastructure projects such as the Multi Media Super Corridor and Electronic Commerce. One of the implementation in electronic commerce is the adoption of Electronics Data Interchange (EDI) technology in business dealing. Since then, everyone raves about the benefits of EDI, but not many are really sure of it. EDI has long been viewed as one of the enabling technologies that will help companies tame the "paper tiger" and reach new heights among the growing number of users of the technologies.

Although electronic commerce has been around for some time in the form of EDI, one must realize that it is not understood well. Actually EDI is one of the various technologies in e-commerce. The term electronic commerce is poorly understood and frequently used to denote different meanings, very often depending on the individual's job function, professional orientation and background, focal product or service, and type of information technology deployed (Wigand, R. T.

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