



Faculty of Manufacturing Engineering

**THE EFFECTIVENESS OF ELECTRONIC DATA
INTERCHANGE (EDI) BETWEEN DIFFERENT SITES OF
PRODUCTION WITH NEW MANUFACTURING
EXECUTIVE SYSTEM (CAMSTAR)**

Tan Choon Heong

**Master of Manufacturing Engineering
(Manufacturing System Engineering)**

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**THE EFFECTIVENESS OF ELECTRONIC DATA INTERCHANGE
(EDI) BETWEEN DIFFERENT SITES OF PRODUCTION WITH
NEW MANUFACTURING EXECUTIVE SYSTEM (CAMSTAR)**

TAN CHOON HEONG

**A thesis submitted
in fulfillment of the requirements for the degree of
Master of Manufacturing Engineering in Manufacturing System Engineering**

Faculty of Manufacturing Engineering

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2015

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by and between

Tan Choon Heong

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and

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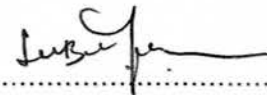
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SESI PENGAJIAN: 2015/16 Semester 1

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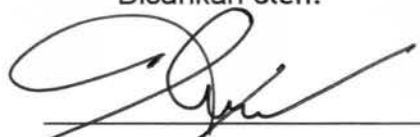
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APPROVAL

I hereby declare that I have read this dissertation/report and in my opinion this dissertation/report is sufficient in terms of scope and quality as a partial fulfillment of Master of Manufacturing Engineering (Manufacturing System Engineering).

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DECLARATION

I declare that this thesis entitled “The Effectiveness of Electronics Data Interchange (EDI) between different sites of Production with New Manufacturing Executive System (CAMSTAR)” is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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Date : 24/2/2016

DEDICATION

I would dedicate my deepest special Thank You and Warmest Love to

My beloved husband Mr. Ng Chong Peng,

My beloved son Mr. Ng Wei Quan and

My beloved daughter Miss. Ng Yue Tzi

For their deep understanding and moral support throughout the year.

I wouldn't be made it without your support.

*** I Love You All ***

Thank you for being the Best husband, son and daughter that you should

Thank you for supporting me when you could

I thank God for giving me a wonderful family

Who support and always care

Who did not leave me alone and sad

There is no one like you all

Who can cheer me up when I am sad

Who can make me laugh

so hard I could cry

*** I Love You All So Much & Thank You ***

ABSTRACT

There are many types of Manufacturing Execution System (MES) solution and many kinds of design for Electronic Data Interchange (EDI) in the market today. Electronic Data Interchange (EDI) is playing a very important role where it is able to provide an effective electronic data sources interchange or data flow between two different sites, different productions or different applications. CAMSTAR System has very high accuracy to generate Electronic Data Interchange (EDI) performance, like auto data entry, analysis, and validation, tools plan and material control during the manufacturing process. CAMSTAR system had been used to replace WORKSTREAM System (WS) which is one of the current Manufacturing Execution System (MES) in Infineon Technologies Company. This WS software already ended their product support in the market today. At the same time, with new EDI developed using CAMSTAR System, it can overcome the issue of human dependence on manual data entry in plating sub-contractor (sub-con) company production line. Paperless is one of the major requirements in global world due to the environment issue. Therefor with the implementation of EDI, paper can be removed. Documentations, data and information can be exchange in electronic format between two different companies without the failure caused by human mistake. There will be no more operator require to manually perform the data entry task where this task will be taken over by system. With the improvement from the implementation of this new EDI, once plating sub-con personal receive the physical lot, they are only require to scan the lot number from the lot tag and then the process flow including the chemical requirement will be already define automatically by system in plating sub-con production line.

ABSTRAK

Terdapat banyak jenis Pembuatan Sistem Pelaksanaan (MES) penyelesaian dan pelbagai jenis reka bentuk untuk Elektronik Data Interchange (EDI) di pasaran hari ini . Elektronik Data Interchange (EDI) memainkan peranan yang amat penting di mana ia mampu menyediakan sumber-sumber yang berkesan bagi data elektronik atau aliran data antara dua tapak pengeluaran yang berbeza ataupun dua aplikasi yang berlainan. Sistem CAMSTAR mempunyai ketepatan yang tinggi untuk mengadakan elektronik data interchange (EDI), seperti kemasukan data automatik, analisis, dan pengesahan, alat dan kawalan bahan semasa proses pembuatan. Sistem CAMSTAR akan menggantikan Sistem aliran kerja (WS) yang telah digunakan dalam Infineon Technologies Syarikat selama 30 tahun dan sudah berakhir sokongan produk mereka di pasaran hari ini. Pada masa yang sama , pembangunan EDI baru ini boleh mengatasi isu pergantungan manusia untuk memasukkan data secara manual dalam sistem pengeluaran di sub-kontraktor. Kertas adalah salah satu keperluan faktor utama di dunia disebabkan isu alam sekitar hari ini dan dengan EDI sekarang, kertas boleh dikeluarkan. Dokumen , data dan maklumat boleh ditukar dalam format elektronik antara dua syarikat tanpa kegagalan yang disebabkan oleh kesilapan manusia. Dengan adanya pelaksanaan baru Data Interchange Elektronik (EDI) ini, operator tidak memerlukan untuk melakukan kemasukan data secara manual lagi di mana tugas ini akan mengambil alih oleh sistem . Semasa sub-kontraktor menerima fizikal lot , mereka hanya memerlukan dengan mengimbas nombor lot daripada lot tag dan aliran proses kimia akan disiapkan secara automatik oleh sistem.

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LIST OF ABBREVIATIONS

AWI	-	Auto Wafer Issuing
EDC	-	Electronic Data Collection
EDI	-	Electronic Data Interchange
EOL	-	End of Line
FOL	-	Front of Line
FTGS	-	Fertigungs Technische Grund Daten (in German)
		Technical MasterData for Manufacturing (in English)
MES	-	Manufacturing Executive System
MIMS	-	Marking Instruction Management System
RMS	-	Recipe Management System
SiKIT	-	Siemens Kennzeichnungs-und Identifikations Technologie (in German)
		Siemens Marking and Identification Technology (in English)
SUBCON	-	Sub-Contractor
UAT	-	User Acceptance Test
WS	-	WORKSTREAM System

CHAPTER 1

INTRODUCTION

1.1 Background

MES Solution is often use in any manufacturing company. It is because with MES software able to lead production in better and clear lot transaction to produce good quality product. There are many types of MES software had been introduced in the market today. It is always a hard time and to found a suitable software to be use to suit for different industry. Once the MES software had confirm it will be need to have discussion, data collection or requirement, data analysis and follow by final design for the application base on the customer need. CAMSTAR system found to be able to provide an effective data source database. In CAMSTAR system, Electronic Data Interchange (EDI) is playing a very important role where it is able to provide an effective electronic data sources interchange or data flow between two different sites, productions or two different applications or system. This can help to reduce the error or failure cause by manual human maintenance and at the same time able to improve wrong data sources issue. With this, work-in-progress (WIP) transaction and lot traceability is able to be improved.

1.2 Problem Statement

A standardization of Manufacturing Execution System (MES) is importance in order to reduce and manage high number of different process steps in different sides and different productions. Accuracy for data sources in term of data entry,