

ONLINE INDUSTRIAL SALES AND SUPPORT SYSTEM

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ABSTRACT

Online Industrial Sales and Support System is an online web base management system to manage industrial machine sales and support for MID Mechatronic Sdn Bhd. The current system of the company is old traditional filing system to record the customers, sales, appointment and do not have a proper management system used and lack of proper platform for support and problem solving solution for customers. Therefore this system is developed to manage sales services and to develop an advisory for technical problems. There are two targeted users in this system, which are the admin staff and the customers of MID Mechatronic Sdn Bhd. This system has total of eleven main modules in this system, which is login and registration, customize machine specification, make appointment and order, manage order and profile, search and download support, forum interaction for the customer side function and manage registered customer, manage machine and specification, approve order and appointment, manage and upload support, forum administration for admin side function. Rapid Application Development (RAD) model is used to develop this project. There are four phases which are requirements planning, user design, construction and cutover. The implementation of interface and coding to each module in the system is completed. The testing shows that the acceptance criteria of the system are fulfilled with the requirements that are set earlier. This system succeeds to achieve the objectives and solve the problems stated earlier.

ABSTRAK

Online Industrial Sales and Support System adalah sistem yang berasaskan web bagi pengurusan jualan mesin industri dan sokongan untuk *MID Mechatronic Sdn Bhd*. Pada masa kini, syarikat tersebut masih menggunakan cara lama untuk mencatat rekod pelanggan, jualan, pesanan dan tidak mempunyai sistem pengurusan yang tepat dan kurangnya tempat untuk sokongan dan penyelesaian masalah untuk pelanggan. Oleh sebab itu, sistem ini telah dibangunkan untuk menguruskan perkhidmatan jualan dan untuk membangunkan penasihat untuk masalah teknikal. Terdapat dua pengguna disasarkan dalam sistem ini, iaitu kakitangan dan pelanggan *MID Mechatronic Sdn Bhd*. Sistem ini mempunyai jumlah keseluruhan sebelas modul utama dalam sistem ini, iaitu pendaftaran masuk, pemilihan spesifikasi mesin, membuat pesanan dan tempahan, menguruskan tempahan dan profil, pencarian dan muat turun sokongan, interaksi forum untuk fungsi pelanggan dan menguruskan pelanggan berdaftar, mengurus mesin dan spesifikasi, menyetujui pesanan dan tempahan, mengurus dan muat atas sokongan, pentadbiran forum untuk fungsi kakitangan. *Rapid Application Development (RAD)* digunakan untuk membangunkan projek ini. Ada empat tahap iaitu perancangan keperluan, rancangan pengguna, pembinaan dan pengubahsuaian. Pelaksanaan antara muka depan dan pengkodan bagi setiap modul dalam sistem telah selesai. Ujian untuk sistem ini menunjukkan bahawa kriteria penerimaan sistem dipenuhi dengan syarat-syarat yang ditetapkan sebelum ini. Sistem ini berjaya untuk mencapai matlamat dan menyelesaikan masalah-masalah sebelum ini.

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LIST OF ABBREVIATIONS

OISSS	Online Industrial Sales and Support System
GUI	Graphic User Interface
PHP	Hypertext Preprocessor
ASP	Active Server Pages
JSP	Java Server Pages
IDE	Integrated Development Environment
SQL	Standard Query Language
HTTP	Hypertext Markup Language
IIS	Internet Information Services
RAD	Rapid Application Prototype
RUP	Rational Unified Process
SDD	Software Design Document
DFD	Data Flow Diagram
ERD	Entity-Relationship Diagram
ID	Identification Digit
UAT	User Acceptance Testing

CHAPTER 1

INTRODUCTION

In this chapter, an introduction to Online Industrial Sales and Support System will be presented, followed by the problem statement, objective and scope of the project.

1.1 Introduction

Internet is very important to us nowadays because it plays an important role in our life no matter in what aspect. The usage of internet is so wide and many business companies try to make full use of it services when dealing with customers. But the growth usage of the online service in local industrial companies business is not convincing in our country compare to other international companies.

When come to industry, most of the people feel that industrial work is more based on technical and hand on task and it is hard to describe and express in a verbal way or using natural language. It is a great challenge for the industrial side

companies to put their sales or services online. MID Mechatronic Sdn Bhd in Penang is one of the industrial companies that facing these problems. It is hard for them to provide online support because customers prefer to call for support. Besides that, the company provides machine information and contact number in the website only. Their website do not supply sales and support function such as online machine overview and customization, online support and solution and others.

Therefore, the Online Industrial Sales and Support System is developed to ease the company's customers when dealing with the company. The system will provide basic information and the background of the company such as vision, mission, commitment, facilities, contact, and location of the company. The system registration is strictly controlled by the admin of the company. Only trusted companies, business partners and future or existing customers are allowed to register and using the function of the system. Customer and sales profile can be manage by customer too.

The system function that provides to the registered customers is online machine overview and customization that allow customers to order and customize preferable specification of the particular machine that are going to purchase. Current machine specification can be update and new machine can be added by admin too. After this, there is online appointment function for the customers to book a date for further discussion on the machine after they make the order and wait to be approved by admin without the online purchasing and payment.

The most important function of this system is the support solution function that will provide simple guidance for the common machine faults or problems that often faced by customers. It has advisory that will provide solution when customers select the issue they faced. The issue can be added and solution can be managed by

the admin in future. User manual can be downloaded by customers when admin upload it in the system database server. The system also provide forum platform for the company's business partners, other companies and customers to discuss some critical issues or giving expert experiences and some services support. The forum topic and comments is control and manage by admin.

1.2 Problem Statements

MID Mechatronic Sdn Bhd seldom fully optimise the usage of internet services on their business. They just provide simple introduction, information and contact of their company. They also lack of customer database.

MID Mechatronic Sdn Bhd do not supply online machine customization for customer to customize preferable specification of the particular machine that are going to purchase machine or online machine overview. And the company still remain using the old traditional way to make appointment using phone.

MID Mechatronic Sdn Bhd waste a lot of time and cost to provide on call technical support because technical stuff is hard to explain verbally. The company do not have a solution advisory or forum discussion group for the company's business partners, other companies and customers to discuss some critical issues or giving expert experiences and some services support.

- The system can provide advisory that will provide solutions according to issues and user manual to download. The solutions can be managed and new issues can be added too. User manual can be uploaded by admin.
- The system can provide forum platform for customers to discuss some critical issues or giving expert experiences and some services support. The forum topic and comment is control and manage by admin.

iii) Tools

- Adobe Dreamweaver CS5
- MySQL
- Apache

1.5 Thesis Organization

This thesis is divided into 5 chapters and each chapter is devoted to discuss different issue in the project. Below is a summary of the content for each chapter:

i) Chapter 1

- Introduction to the project is presented along with the project's problem statement, objectives of the project and the scopes of the project.

ii) Chapter 2

- Research and literature review related to the project is presented.

iii) Chapter 3

- Project analysis, design and methodology are presented.

iv) Chapter 4

- Database, interface and coding implementation.

v) Chapter 5

- The testing result of the system and discussion on the result are presented.

vi) Chapter 6

- Summary of the project is presented.

CHAPTER 2

LITERATURE REVIEW

This chapter will be devoted to a survey on the existing system of MID Mechatronic Sdn Bhd, followed by the systems that similar with Online Industrial Sales and Support System, development tools and methodology.

2.1 Survey on the Existing System of MID Mechatronic Sdn Bhd

MID Mechatronic Sdn Bhd has an existing system to manage all the machines sales and technical support for the company. The company has an online system that only provide some basic background of the company, contact number and some brief machines information. They do not fully utilize the usage of internet services in their company and the system did not provide any extra services for customers that visiting the site. As a result, the customers will not visit second time after they get the information they need about the company.

The company is using personal detail form to record down the customer information manually and keep them in a file. They do not have an organized customer database and it is hard to manage and search back the customers by using filing method. Sometimes the information of the customer may lose because of some unexpected accident. The company is planning to register all customers in computer and store them safely.

The company has a clerk responsible for picking up customer's phone call for appointment booking and enquire for information. The clerk record down all the appointment manually on a note and pass to the sales manager. It is a very traditional way to record down appointment and it may cause misunderstanding between the clerk and customer because it does not have a proper way of recording down the appointment and sometimes conversation can brought to conflict. When passing the note to the sales manager, they may misplace the note or the time and date for the appointment crash with other appointment.

The sales manager or vendor of the company will deal with the customer face to face regarding on the machine specification customization. Once again, the requirements from the customer is wrote down by the vendor manually on a paper and brought back to the company to redesign the machine specification set by the customer and after they finish up, they set a date and time to deal again for confirmation. Eventually these processes need to repeat a few times to discuss with the customer to make sure the requirements are met. It is wasting time and cost for the machine development because the requirements cannot finalize early and do not have a clear overview plan.

The company provide technical support services for every machine sold out for the first three months and it is free of charge. After the machine ships, the

support team is very busy at that time because the customers not yet familiar with the function or control of the machine and they need to stand by any time when the customer calls. Even a very minor problem the customer also calls for support team to step in to their place to fix it. Eventually those problems can solve by themselves if a proper manual or solution is there to guide them. The current system they using on the support side is not good enough to manage the problems stated above. And a lot of man power and cost is of that company is wasted in the technical support.

2.2 Systems that Similar with Online Industrial Sales and Support System

There are a lot of sales and support system online and the best three that are similar with the Online Industrial Sales and Support System function were chosen to do critique and comparison.

2.2.1 National Instruments Corporation System

The National Instruments Corporation System mainly sell design, prototype, and deploy systems that involve different of engineering and science field (National Instruments, 2010a).

The National Instruments Corporation System main page as shown in Figure 2.1 (National Instruments, 2010b) consists of navigation bar that link to other function of the system. It provide login and account registration function on the page. The page is customizable for the existing user to choose what content to display on the main page. It also provides account and profile setting for

existing user. Search tools are prepared for user to search specific information. International call is available for user to contact their company instantly by clicking the link at the page.

The main page eases the existing user to login and customize their preferable page, account and profile setting. The navigation bar is well organized to increase the usability of the system. But the system lack of brief introduction of the company and instruction to guide them at the main page and eventually will confuse the user which is first time visiting.

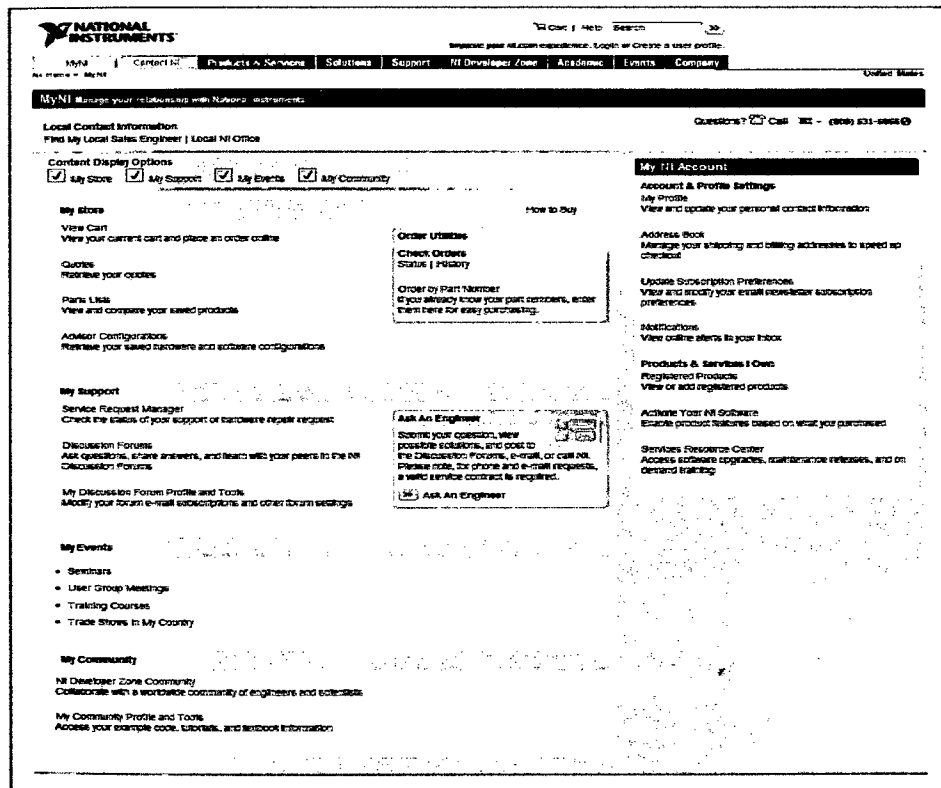


Figure 2.1: National Instruments Corporation System - Main Page

The National Instruments Corporation System machine configuration page as shown in Figure 2.2 (National Instruments, 2010c) consists of product configuration function and the product chosen by the user can be configure according to the user needs. The side bar provides detail information to guide the user for the configuration and customization. The system provides expert call function that allows user that has doubts to enquire extra information from the experts. The page shows a display of the machine that are going to configure and the entire available slot for plug in. It also prepares a draft pricing list for each specification that the user going to add.

The system is very flexible in configuring the product by the user in details with pricing list is prepared. But it is quite complex for beginner user to handle this kind of configuration.

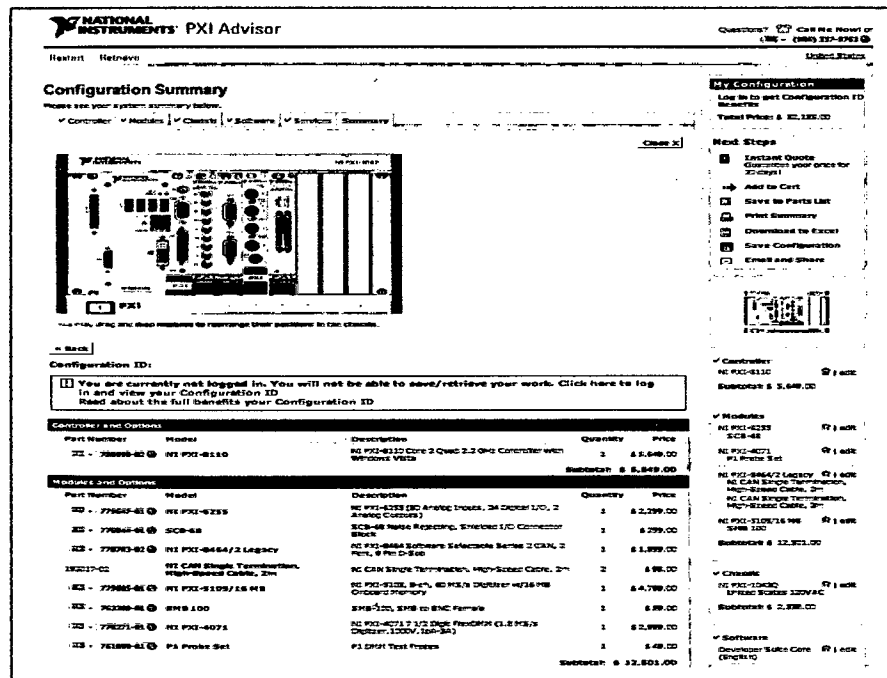


Figure 2.2: National Instruments Corporation System - Machine Configuration Page