A DATABASE OF INDUSTRIAL PRODUCTS IN NIGERIA

A CASE STUDY OF

RAW MATERIAL RESEARCH & DEVELOPMENT COUNCIL
(RMRDC, Abuja)

BY

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PGD/MCS/2004/2005/1161

A PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF POST GRADUATE DIPLOMA (PGD) IN MATHEMATICS/COMPUTER SCIENCE OF THE FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA NIGER STATE, NIGERIA.

DECEMBER, 2005

DECLARATION

I hereby declare that this project work is an original work carried out by me under the close supervision of Dr. U. Y. Abubakar, and that it is not a duplicate of any written work.

_____   _____

John Nnanna Iteogu   Date
Student

CERTIFICATION

The project has been examined and found acceptable in partial fulfillment for the requirement of the award of Post Graduate Diploma (PGD) in the Department of Mathematics/Computer Science, Federal University of Technology, Minna, Niger State.

_____   _____
Dr. U. Y. ABUBAKAR   DATE
(SUPERVISOR)

_____   _____
DR. L.N. EZEAKO   DATE

_____   _____
EXTERNAL EXAMINER   DATE

DEDICATION

This project is dedicated in the name of Jesus to the Lord God Almighty for His enabling powers, strength, mercies, grace and protection all through the period of this programme.   I thank the Lord so much especially for making my dreams of accomplishing this programme come through.

ACKNOWLEDGMENT

First and foremost, my profound gratitude is to God Almighty who is my fountain of knowledge and wisdom for giving me the necessary succour throughout the course of my study. Also to my beloved wife **Mrs. Gladys Ngozi Iteogu** and my beautiful and lovely daughters, **Precious and Amarachi** for their unflinching support and understanding.

Also, my appreciation goes to my supervisor Dr. U. Y. Abubakar who consistently gave me necessary ideas, superlative views, meaningful contributions and timely corrections. May the Lord God Almighty richly reward and bless him. Prof. K.R. Adeboye, Dr. N.I. Akinwande and Dr. Aiyesim are recognized for their support.

Furthermore, I thank my boss in the office – Mallam Isa Hassan Mohammed for his understanding and approvals.

Worthy of thanks also are my colleagues, Jabbo Mohammed, Andrew Obichie, Kazim, Salihu D. Ibrahim and all others for their support and contributions. Also to all IT staff of the Raw Material Research & Development Council.

Last, but not the least, my late parents Mr & Mrs. J.D.O. Iteogu who stood as my academic spring board, laying for me a solid academic foundation. My beloved sisters – Mrs. Obike and Mrs. Amuzie, and brothers Jude and Bright, May almighty Lord bless them all.

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John Nnanna Iteogu

December, 2005

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TABLE OF CONTENT

Chapter Three

Chapter Four

Chapter Five

Bibliography

ABSTRACT

The research work seeks to reduce the prevalent lack of adequate and current information on the general state of the Nigerian Manufacturing Industries especially its major operations and local manufacturers. Thus it provides a computer-based method of getting instant information about Nigerian manufacturing Industries and suppliers of industrial products/services based in Nigeria, as well as their awareness among various segments of the industry on the available resources, services and utilities to serve different interest groups within and outside the industry.

CHAPTER ONE

1.0   **GENERAL OVERVIEW**

1.1   Background of the study

Most developing countries view manufacturing industrial technology as imported technology. The business community needs to be fundamentally oriented with the peculiarities of such culture. No one will deny the fact that most entrepreneurs go first to technical magazines when they wish to set up even the simplest of plants instead of scouting around to find which local designer and fabricator can do the job. Compounding this problem is the lack of an adequate information apparatus to keep the public informed on the technologies that have been developed locally. Some of such technologies have accumulated a lot of dust where they were developed because entrepreneurs have either ignored calls to assist in their commercialization or they feel imported alternatives are better options. They only realize their error when spare parts are needed and then discover that they are permanently hooked. Their profit margins are therefore normally threatened, as they must source for foreign exchange to purchase these parts. With their attitudes, capacity utilization of most manufacturing industries dropped progressively as they could not import the raw materials and spare parts, which the nation's foreign exchange earnings could no longer sustain.

In this regard, publicity and awareness generation is very critical to the issue of local sourcing of products/services. Thus, there was need to adopt a policy establishing a very good media relations, organizing technical seminars and exhibitions and participating in many domestic and relevant foreign trade fair and exhibitions.

1.2 Statement of the problem

It is important to note that a substantial amount of our foreign exchange earnings is committed yearly by the manufacturing sector to importing raw materials, equipment and machinery. It is against this background that an effort should be made to have a good marketing tool that will publicize the manufacturing companies, especially the local fabricators and the products/services they offer.

1.3 Objectives of the study

The objective is to design a system that:

1. Informs and enlightens the public about the objective, functions, achievements, addresses etc of manufacturing industries in Nigeria.
2. Serves as a public relation and marketing tool for the manufacturing industries.
3. Will initiate, primarily, an off-line dialogue between the consumers and the local manufacturers of any specified product.
4. Will improve communication and information flow between the consumer and manufacturer.
5. Will be a useful research and reference material for professionals, academicians, planners, scholars and other students.

1.4 Research Questions

* Where can I find a particular product?
* Where can I locate a particular company?
* Which of the branches of a particular company is closest to me?
* What are the different types of a particular product produced by this manufacturer?
* How can I contact the manufacturer of a particular product for a business negotiation?

1.5   Significance of the Study

The project is of great importance and helps to improve the economy by creating awareness on available manufacturing industrial products that can be sourced locally. The user will harness the power of computer to locate, select, compare and purchase the most suitable product for his need. With a simple search facility, the user can locate any product within couple of seconds either by product name, product description and for company name, using a smart product inquiry generation utility.

1.6   Scope of the Study

The study is limited to manufacturing industries and suppliers of industrial products based in Nigeria only. It will inspect some existing documentation on the subject, standardize and classify the records and then convert them into electronic form. Questionnaires will be used to sample manufacturing industries in Federal Capital Territory, Abuja. The research may also be limited to some resources within the reach of the researcher.

CHAPTER TWO

2.0   **LITERATURE REVIEW**

2.1   Imporatance of Self-Reliance

The desirability of self-reliance makes it imperative for us to continue to look inwards for our raw materials, equipment and plants. Ahmadu (1994) suggests that:

"One of the ways of going about self-reliance is to use locally made goods and encourage the equipment manufacturers by patronizing their products and providing them with requisite in formation" This chapter will review briefly the relevance institutional framework set up to promote, aid and foster the growth of industries by providing support such as marketing of the products and services. It also reveals literature relating to the types of media used for the awareness generation of industrial products sourcing.

2.2   Institutional Framework

i.   INDUSTRIAL DATABANK

Egbon (1995) in his book "Industrial policy and manufacturing performance in Nigeria" reveals that:

"Industrial databank is located in the Federal Ministry of Industries. It is charged with the responsibility of gathering, storing and retrieving data. The databank is expected to provide information on existing industries in the various sub sectors. The production capacities and expansion plans, production cost, the state of the market, price movement, raw materials available in various parts of the countries etc".

He went on to add that:

"The data so gathered must be structured and classified to enable instant access to any kind of information such as "the manufacturer of a

particular product or service" the sources of raw materials, manpower and market for a particular product".

ii. RAW MATERIAL RESEARCH & DEVELOPMENT COUNCIL (RMRDC)

Is an organ of Federal Ministry of Science & Technology. In accordance to Aribisala (1991); It is an umbrella organization for the coordination of all the various efforts by public and private sectors in the research and development of local industrial inputs. It is expected to work in close collaboration with the Federal Ministry of Industries, which has the overall responsibility for the development of incentives relating to the raw material utilization".

In its efforts at documenting the Nigeria's potential for raw material production and capacity for fabricating plants and equipment locally, it publishes a directory of raw material producers, processing equipment and plant manufacture. In its introduction of its maiden edition of the directory Ogazi (1991) writes: the process of preparing ones directory involves the preparation of questionnaire and fieldwork to comprehensively identify and physically inspect the installed capacities and physical status"

The directory is presented in 2 sections:
A. Raw Material Producers: Which contains information about the producers of various raw materials that paid to be listed in the directory.
B. Processing Equipment and Plant Manufacturers: Which contains the information about manufacturers of equipment or machinery and users of machinery or equipment.

Ayo (1991), suggests that: the data collected as a result of the comprehensive survey of RMRDC should be standardized, classified and

captured into an electronic system that will aid and guide entrepreneurs on product sourcing and also assist policy makers'.

In addition to the directory RMDRC organizes, an annual exhibition tagged "Technology exposition' or simply "Techno-expo", where the local fabricators display (show) some of their products.

iii) CHAMBERS OF COMMERCE, INDUSTRIES, MINES & AGRICULTURE: Available almost in each state of the federation the chambers organize traded fairs and exhibitions periodically.

According to Ejiofor (1986), "the objective of the exhibition is to expose the product or service of the various manufacturers and to facilitate the transfer of technology from one region of the country to another".

iv) Foundation for the promotion and commercialization of indigenous technology (FOPCIT). This is an independent body that was set up at the end of the 'Made -in –Nigeria Trade Fair' held in the then Anambra State in 1969. Ejiofor (1986) explains that "FOPCIT is set up to look into ways and means of translating t6he innovative exhibits displayed by higher institutions of learning and research and development institute in Anambra State during the trade fair into commercial industrial ventures.

It is in full realization of the foregoing that FOPCIT publishes a report which provides detailed information about various industrial products and the known natural resources of Anambra State including their locations, availability, industrial applicability and status of exploitation.

In organizing the report Ejiofor (1986) writes, "the committee is mandated to compile the names of institutions, their product names, specifications, pictures, industrial applicability.....".

Ejiofor (1986) envisaged that the inventory of existing machinery and other prototypes will acquaint both potential industrialists and manufacturers with what is available locally for various industrial applications.

So far the literatures of relevant institutional framework have been reviewed in this study. However, it should be noted that the information gathered by the different institutions are structured, classified, objective and specific. They are both targeted at attributes such as name of manufacturers, product name, description, picture and location.

It follows therefore that the data from various sources can be standardized, normalized and integrated.

2.3 Media used for awareness generation:

a. Advertisement: Hill (1980) in his book marketing technological products writes, "the most popular medium of awareness generation is through the concept of advertisement. The basic function of advertising includes among others:

1.   It informs people that new or improved products are available.
2.   It helps to sell the products by selling the company.
3.   It develops a direct bond between producer and consumer.
4.   It is a form of guarantee that the product of service it promotes will deliver value to its users and maintain standards.
5.   It ensures that people are aware that they have a choice to select what they want in a wide range of purchases and to reject those that are inappropriate to their lives.

6. It is an essential part of competition and competition is essential to choice.

7. Advertising increases sales for individual manufacturers and also expands the markets.

    The manufacturing industries, according to him can place advertisement on a wide choice on media including print media that is (magazines, newspapers, technical press, yellow pages etc), and broadcast media (radio, TV, internet and other electronic system).

8. Software catalogue (& Internet): Awareness generation can be achieved through the use of computers. Smiddy (1986), in his book 'encouraging innovation in technological age' explains that the power of computer and telecommunication can be combined to provide vast information about innovative achievement. He cites an example with the release of powerful software tagged 'Digicat' in India.

Digicat, according to smiddy(1981)., is software that combines multimedia and database technology. It was developed for the Landelijke Vereniging Van Wereldwinkel (Dutch National Association of World shops). He went further to explain that the objective of the system is to improve the income of small scale producers in developing countries according to the principles of fair-trade.

It supports the consumer with a complete overview of the product line in combination with the background information of products, producers and their countries.

2.4 Limitations of existing tools:

Some limitations of the existing media were highlighted by Hill (1980). He classified the media into two groups: a. The process and b. The broadcast.

a. *The Process:* This applies to all forms of point media including newspaper, magazines, catalogues, business directories and technical press. He highlights that the major disadvantages, is that of poor print quality a relatively high cost and the fact that there is often such a jumble of advertisement that anyone advertisement may be overshadowed by its neighbour.

b. *The Broadcast:* Roy (1980), also comments on limitations of trade fair and exhibitions. He writes that, it lost money, as do capital, manpower, raw materials, packaging, transport and all the other essential pars of the manufacturing and marketing process.

We have reviewed the literature of relevant media used for awareness generation from the literature we would be able to establish that a software can be developed, as highlighted by Smiddy (1986), and be used effectively to aid in awareness generation.

CHAPTER THREE

3.0 SYSTEM ANALYSIS AND DESIGN

3.1 A Review of the existing System

The present system of information retrieval in the council is manual and this has posed a lot of difficulty in getting the right information at the appropriate time and to the appropriate location.

3.2 System Design

Data gathering Instrument

Two methods of data collections were used in this research work. These are record inspection and questionnaire.

1.   *Record Inspection:* It is the major instrument for the data collection in this project. It involves a careful examination of the structure of existing document (i.e. secondary data) on raw materials producer and equipment manufacturers, which has been published by some reputable government and private organizations. The record structures of the data in the documentation were validated, standardized and converted (adopted) into the new system.

RELIABILITY OF RECORD INSPECTION:

i.   It gave the researcher an in-depth understanding of the basic input and output requirements.

ii.   It enabled the researcher to compare the different sources and identify, from their structures, commonly asked questions e.g. all the inspected materials included 'product name', contact address' etc.

iii. It is made easy to gather large amounts of data from the materials which were vetted by more experienced persons.

iv.   It guided the researcher in the output design.

Questionnaire: Questionnaires were used as data gathering instruments. In this approach a set of questions were drawn by the researcher and given to selected companies around Kaduna metropolis.

SAMPLING OF THE SURVEY:

Oduko (1992) defines sampling as the taking of any representative of the population. In other words, it is a survey technique of selecting a small part of a population from the general population with that small part representing the general part.

Stampel and Westley (1989) give a more elaborate and comprehensive definition.

"Sampling is the process of selecting elements, companies or products) from a population (the aggregate of elements about which the research want to make inferences)". They explain further that sampling can be classified as either "probability" or "non-probability" sampling. The former gives each element in a population a good chance of being selected to constitute a sample while the latter; the researcher uses his discretion to select the element that constitutes the sample for this study. Non-probability or biased sampling was used to select the respondents.

CRITERIA FOR SELECTION:

The fabrication and raw materials producers in Kaduna constituted the sample for this project. The following criteria were used in the selection of the prototypes:

i. Only products that were developed based on sound scientific and technological principles are considered.

ii. Prototypes must fall into one or more of the following:

a.   Industrial products/equipment/devices.

b.   Agricultural and food products/equipment /devices.

c.   Domestic products/equipment /devices.

d.   Educational products/equipment/devices.

iii. In selecting the prototypes, priority will be given to those with scientific documentation on the functionality and features.

RELIABILITY OF QUESTIONNAIRES:

Sobowale (1983) in his book "scientific journalism" says questionnaires are useful because they help to:

i. Standardize the researchers' questions.

ii. Ensure that the same questions are asked in similar ways.

iii. Guarantee uniformity of answers from the respondents.

iv. Facilitate data processing through easy systems design and coding.

INSTRUMENTS FOR DATA ANALYSIS:

The statistical technique used in data analysis of this research project is the frequency distribution technique. This technique allows the respondents' responses to be tallied, calculated and given in percentages. This will enable the research to establish the following:

i. Classify the fabrications into different categories.

ii. Estimate the concentration of manufacturing industries in the area.

iii. Predict the characteristics of the population from the characteristics of the sample.

Administration of instrument:

This section is concerned with the statistical tool or techniques used by the researcher. Some of them are: Lickert Type Rating Scale, Chi-square, the Guttmanscale, measures of central tendency, measures of variability, correlation etc. e.g. the Lickert Type Rating Scale is used to

generate a list of statements about what is being measured and providing a set of graduated response options which are summed up to determine if the response agree or disagree with the attribute being measured. The nature of this particular research project does not nee any statistical tool. Therefore, the questionnaire used as an instrument for collecting data in this study is self-administered by the researcher.

The respondents are asked to fill and return the questionnaires to the researcher. The major advantage of self-administration of questionnaires is saving of time and expense. The researcher will go personally to collect all the filled questionnaires by the respondents in order to ensure a good return rate.

The questionnaire used is open-ended. This allowed respondents to furnish the researcher with information on the subject matter.

The data gathering technique use in this study is 'survey method'. Research instrument (questionnaire) is distributed to sample companies in Kaduna.

Survey Method: Stampel and Westley (1989), defined survey as : " A study that collects information by asking people questions. "Survey research is used mainly because information collected (the data) is generally suitable for statistical analysis. The vast majority of survey research projects in which data are collected from a section of individuals in the population. Inferences about the large or general population are made from the information gathered from those people in the sample. Stampel and Westely (1989) write that there are 3 basic survey designs: They are cross-sectional studies, the Panel study and the Trend study.

In this research project, the cross-sectional survey is adopted. In this type of study, respondents are interviewed once only and the data collected provides representation of the larger population at the time of study.

According to Stampel and Westley (quoted above), cross-sectional surveys can describe the characteristics of the sample (e.g. respondents' attitudes or behaviours) at a given point in time.

The survey method is adopted in this study because it has been found to be useful in the following ways:

i.   Survey can be used to investigate realistic settings.

ii.   Data collected through survey can be coded numerically for easy statistical analysis.

iii.   Large amount of data can be collected with relative ease from a variety of people.

iv.   Survey method is relatively inexpensive when compared to other research methods.

v.   It allows for error margin to be calculated.

The respondents are asked to fill and return the questionnaires to the researcher. The major advantage of self-administration of questionnaires is saving of time and expense. The researcher will go person ally to collect all the filled questionnaires by the respondents in order to ensure a goof return rate.

The questionnaire used is open-ended. This allowed respondents to furnish the researcher with detailed in formation on the subject matter.

The input specifications are:

1. Company Registration
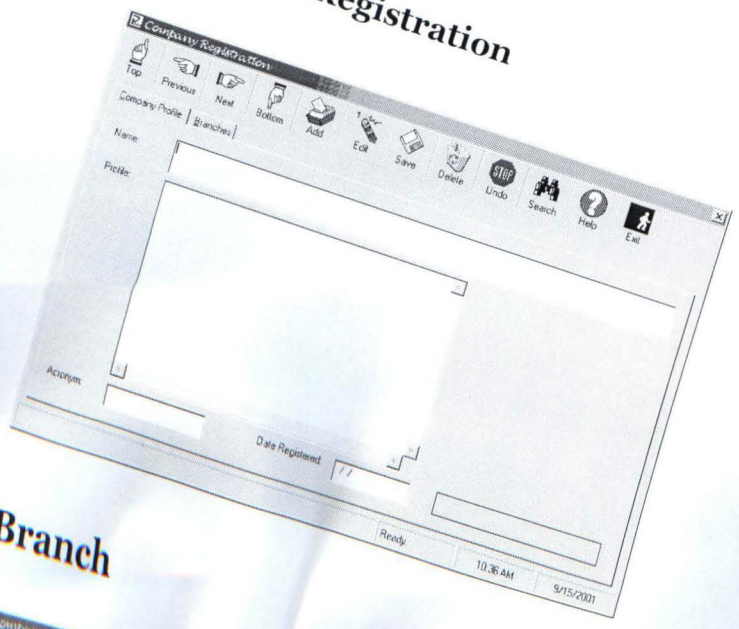
2. Branch
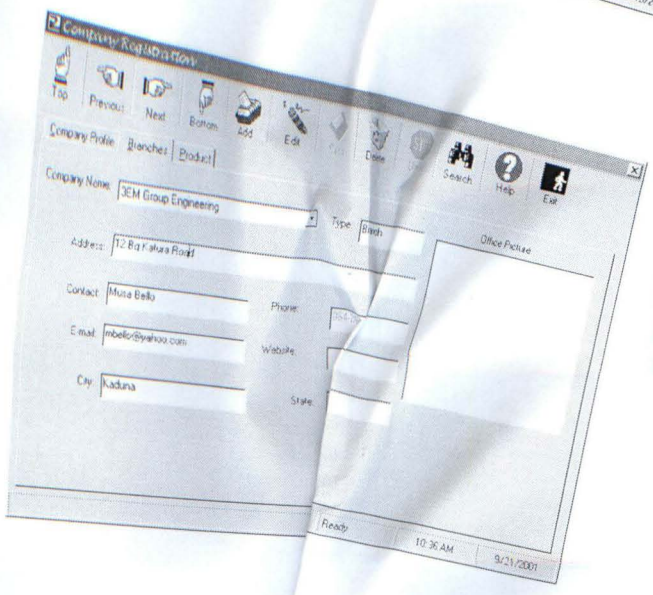
3. Products and Ad Registration
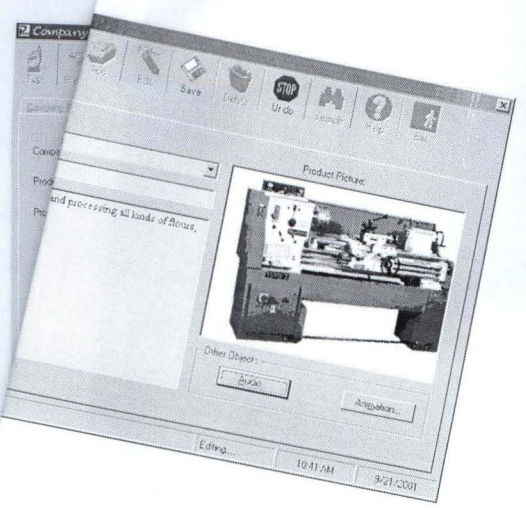
3.2.1 **Input Design**

Having discussed the system design, where we identified the various instruments used for data gathering, it is import ant to look at the information model / input design.

The information model can be divided into three (3) stages. These are:
1. Conceptual schema   2. Logical schema 3. Physical schema

The Conceptual Schema is an in formal view of the system. In essence it consists of the data, reports and other documentation obtained by the researcher on completion of the survey/fact fin ding stage in the development. These in clued the manufacturers' details, their pro ducts information, product pictures, branch offices, advert details etc.

The logical schema consists of formalizing the conceptual schema. It consists of a set of tables which describe the various relationships discovered between the data as well as the data elements themselves. It must reflect accurately the information represented in the conceptual schema. The logical schema organizes the data in such a way that it becomes a model for the companies' information system.

The Physical Schema is the physical data base that stores information about the manufacturers and their products. The information system requires sophisticated hardware and software to support it, and will be discussed under **'implementation'** later in the chapter.

The three level schematic approaches for the data modeling is

Summarized   below:

Manufacturer
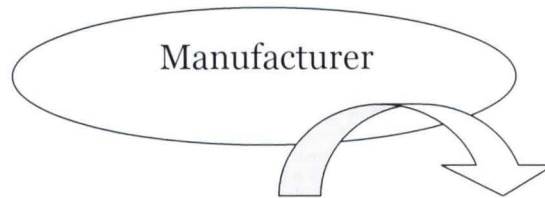
Input documents, adverts, Products details, pictures, Locations	Conceptual Schema
Data elements and the structural relationships between the data elements in a tabular form.	Logical Schema
Actual data held on a database with supporting software and hardware to use it.	Physical Schema

Conceptual Schema: A perception of the manufacturers, which is an *informal* model

Logical Schema: A formal model of the manufacturer.

Physical Schema: A physical implementation of the model.

a)   Input Specification

The following illustrates the input requirements for each entity identified. The data will e captured using a combination of the following input devices.

1.   **Keyboard-** For typing text, number and other ASCII characters.

2.   **Mouse-** For locating and selecting options that may be available at the program's run time.

3.   **Scanner-** For scan-converting image files from source (hard copy) into system (into the current record)

4.   **Digital Camera-** For recording animated data, such as the operation of a product into the digital form into the computer (such as AVI).

5. **Sound Recorder-** For recording audio inputs, such as product description, against the corresponding record in the system.

b) Output Specification

The system will generate the following outputs:

1. List of companies and their locations
2. Products of a particular company
3. Distinct list of products in the country
4. Product details
5. Company details
6. Concentration of companies in each state
7. Distribution of a particular product's access across the country.

The output specifications are as follows:

i. **List of companies and their locations**

MANUFACTURING INDUSTRIES AND SUPPLIERS OF INDUSTRIAL PRODUCTS

COMPANY: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ADDRESS: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

SUMMARY:

    TOTAL NUMBER OF COMPANIES   #, ###, ###

---

ii. **List of products of a particular company**

<div style="border:1px solid black">

MANUFACTURING INDUSTRIES AND THEIR PRODUCTS

COMPANY: **PRODUCTS**

XXXXXXXXXXXXXXXXXXXXXXXXX   XXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXX   XXXXXXXXXXXX

</div>

iii.   **Distinct List of products in the country**

<div style="border:1px solid black">

LIST OF INDUSTRIAL   PRODUCTS IN THE COUNTRY

S/No: **PRODUCTS**

#######   xxxxxxxxxxxxxxxxxxxxxxxx

#######   xxxxxxxxxxxxxxxxxxxxxxxx

</div>

iv. Product Details

PRODUCTS INFORMATION

NAME: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DESCRIPTION/SPECIFICATION

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

MANUFACTURER:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ADDRESS: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

v. Company Details

COMPANY PROFILE

NAME: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ACRONYM: XXXXXXXXXXXXX **DATE REGISTERED:** __/ __/ __

OFFICE(S): XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

PROFILE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

vi.   Concentration of manufacturing companies in each state.

```
CONCENTRATION OF MANUFACTURING COMPANIES IN EACH
STATE
            STATE                    NO. OF COMPANIES
            XXXXXXXXXXXXXXX          ##########
            XXXXXXXXXXXXXXX          ##########
                TOTAL                ##########
```

vii.   Distribution of products across the state.

```
        DISTRIBUTION OF PRODUCT ACROSS THE STATES
        PRODUCT NAME: XXXXXXXXXXXXXXXXXXXXXXXXX
                STATE                    NO. OF COMPANIES
            XXXXXXXXXXXXXXX              ##########
            XXXXXXXXXXXXXXX              ##########
                TOTAL                    ##########
```

viii.   Inquiry prints out/e-mail message content.

```
                            <FROM>
                            XXXXXXXXXXXXXXX
                            XXXXXXXXXXXXXXX
                            <Date:  --/--/--
<TO>
XXXXXXXXXXXXXXX
XXXXXXXXXXXXXXX
        ENQUIRY ON PRODUCT: XXXXXXXXXXXXXXX
```

```
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

   Also send:
   XXXXXXXXXXXXXXXXXXXXXXXX
   XXXXXXXXXXXXXXXXXXXXXXXX
```

3.2.2 Files to be Created

1.   Company

Holds the profile of manufacturer: i.e. their names, historical back grounds or mandates.

2.   Branch

Holds the branch addresses of the manufacturer's offices across the country. The information (attributes) contained include-City, State, Telephone, Contact Person, Web site, E-mail etc.

3.   Products

Holds products information such as name of product, description, picture etc.

4.   Adverts

Holds company/product adverts. It may store video files such as Animated Video Interleaf (AVI), sound files, etc.

a.

File Structures

i. **ENTITY: COMPANY**

FIELD	TYPE (SIZE)	CONSTRAINT TYPE	DESCRIPTION
CO_CODE	LONG INTEGER	PRIMARY KEY	Company ID. Uniquely identifies each record in the table
CO_NAME	TEXT (100)	UNIQUE	Company Name. Disallows duplicate Entries
COHIST	MEMO		Company Details
ACRONYM	TEXT (20)		Company Acronym
CLOGO	BINARY/OLE		Company Logo. An Object from other application such as CorelDraw, paintbrush, etc.
REG_DATE	DATE		Date record was create in this application

ii. **ENTITY: BRANCH**

FIELD	TYPE (SIZE)	CONSTRAINT TYPE	DESCRIPTION
CO_CODE	LONG INTEGER	FOREIGNKEY	CompanyID.Reference Company table
BCODE	LONG INTEGER	PRIMARY EY	Branch ID. Uniquely identifies each record in the table
BCONTACT	TEXT (40)		Contact Person
BADDR	TEXT (60)		Office Address – such as Street
BTYPE	TEXT (20)		Office Type (ie. HEAD OFFICE or BRANCH OFFICE)
CITY	TEXT (20)		City where office is located
STATE	TEXT (20)		State where office is located
WEBSITE	TEXT (40)		Website Address
E-MAIL	TEXT (40)		E-mail Address
PHONE	TEXT (40)		Telephone Nos. Separated (Animation)

iii.   ENTITY: **PRODUCT**

FIELD	TYPE (SIZE)	CONSTRAINT TYPE	DESCRIPTION
CO_CODE	LONG INTEGER	FOREIGN KEY	Company ID. Reference Company Table
PCODE	LONG INTEGER	PRIMARY KRY	Product ID. Uniquely identifies each record in the table
PNAME	TEXT (100)		Product Name
PDETAILS	MEMO		Product Details – such as product Specification
PPICT	BINARY/OLE		Product Picture
PSOUND	BINARY/OLE		Audio Description of product
PPROCESS	BINARY/OLE		Product Operation (Animation)

iv.   ENTITY: **ADVERT**

FIELD	TYPE (SIZE)	CONSTRAINT TYPE	DESCRIPTION
CO_CODE	LONG INTEGER	PRIMARY KEY	Company ID
ASOUND	BINARY/OLE		Audio Advert
AMOVIE	BINARY/OLE		Animated Advert
ADVERT	BINARY/OLE		Product Operation (Animation)

3.2.3 Output Design

Before discussing the physical schema, it is pertinent to consider how the information may be grouped from a user's point of view, that is, how the relations may be 'stored, logically. The information will be stored physically on the basis of processing speed, economy of storage space and other physical 'considerations'.

From the conceptual schema, the following relations (logical schema) were deduced:

Entity-Relationship Diagrammatic Representation

i.   <u>Between Company and Product</u>

| COMPANY | I   :   M | PRODUCTS |

One-to-many Relationship: This means on manufacturer can have one or more products.

ii.   <u>Between Company and Branch</u>

| COMPANY | I   :   M | BRANCH |

One-to-many Relationship: This means on manufacturer can have one or more products branch Offices.

ii.   <u>Between Company and Advert:</u>

| COMPANY | I   :   M | ADVERTS |

One-to-many Relationship: This means on manufacturer can register only one advert.

b. The Physical Schema

Because the data gathered from the survey need to be stored for subsequent reference, we need to develop the physical Schema. This will not only include the 'data base' where the data and their relationships are defined, but also the ability

to extract that data in the format required by the user (consumer).

i. Database

A database is, in a non-professional's approach, is simply a place where we store information or pool of data. More than that, it is a place where we store 'organized' information for a purpose. We organize the information in our database in such a way that our programs and the applications can provide useful functions for the consumer.

a. *Relational Database*

A relational database stores and displays data in a tabular format of rows and columns, like a spreadsheet.

The power of relational database comes from their ability to store data with minimal duplication and from their ability to link (relate) data from different sources together. Relational database can easily relate two or more fields together. By linking the fields, we can link entire records.

b. *Components of data base*

(i)   Tables   (ii)   Records   (iii)   Fields

(i) **Table:** A table stores specific set of information. There is one   table for company, one for products, one for branch, and one for advert, for example.

A table is a logical grouping of related information. Each table is arranged in rows and columns.

(ii) **Records:** Logically related information. In a table, a row represents a record.

(iii) **Fields:** Individual entries – such as product Name, Description, etc.

The relationship between these attributes is that – *Fields* combines to form records, and a *record* or collections of records constitute a table.

The physical Schema will be a relational database object that contains, among others, four (4) relations (tables), one corresponding to each of the entities defined in the logical schema (i.e. *Company, Product, Branch, Advert).*

3.3 The Programming Language

b) Programming language software provides the tool necessary to develop new computer programs. Some popular languages for the programmers are C, C++, Pascal, Basic etc. the language required for implementation is 'VISUAL BASIC'.

Visual basic is quite powerful- if you can image a programming task, it can probably be accomplished using visual basic.

What is VISUAL BASIC?

The visual part referred to the method used to create the graphical user interface (GUI). The basic part refers to the BASIC (Beginners all purpose symbolic code) language. The language is highly flexible and rich. It contains several hundred statements, functions, and keywords, many of which relate directly the underlying operating system (windows).

3.4 Cost/Benefit Analysis

Visual basic programming language has the following capabilities that made it easy to achieve the desired objectives.

- Data access features: Such jet engines that allow us to create the database.
- ActiveX technologies that allow us to use the functionality provided by other applications such as windows media player, CorelDraw, Paintbrush, Microsoft Excel and so on in your application.
- Internet capabilities that make it easy to provide access to applications across the internet. It allows us to easily incorporate facilities for sending mails from the consumer to any manufacture.
- The facility that allows us to create a true 'Exe' file that uses a run-time dynamic-link library (DLL) that we can freely distribute.

It also allows us to integrate windows facilities such as 'Win Help' for providing that will make the system highly user-friendly.

CHAPTER FOUR

4.0   **SYSTEM IMPLEMENTATION**

4.1   System/Program Flowchart

This is a useful tool for analyzing the necessary logic of the program. It is a diagrammatic or pictorial representation of the program logic flow. It is usually drawn before the program is coded. Flowchart can be system or program flowchart. System flowchart of this work is on appendix B below.

4.2   System Requirement

 (a) Hardware

1.   IBM PC or compatible with the following specification or higher

Pentium 4 Processor

32 MB RAM

200MB free hard disk space

Multi media capacity

Window '95 enhanced keyboard

Serial (or PS/2) mouse

Dial-up network cards.

2.   Monitor

The primary output device of a computer system.   It resembles a television or window, at which graphics information is displayed. A variety of types of monitors are in use presently, each based on the technology which differs mainly in the way the image is produced. It gives rise to the other considerations, such as the resolution and colour of an image produced by a given type of monitor. A high-resolution monitor that supports both text and graphic output is required.

3. Printer

The printer is an output device that will be used to create character and graphic image on paper. Examples include Dot matrix, bubble-jet, daisy wheel, Laser jet etc. Each of these printers varies in price, cost of operation, quality of images and speed.

Laser printer is recommended due to its speed and also the quality of image it produces. Alternative, DeskJet may be used if the priority of the output is on color.

B) Other peripheral (supporting) devices

4. Scanner: Scanners are used t o import into the computer. They operate by translating images into digital code, which the computer can process. The common types of scanners include 'page scanner', 'hand scanner', slide scanners and bar code scanner.

5. Microphones: The instrument for converting sound wave into electrical impulse of conversion into sound files after transmission of recording.

6. Digital Camera: Like the microphone, a digital camera will be required for conversion of graphics animations into electronic files (.AVI, .MPEG, JPEG etc).

7. Telephone: Telephone is an electrical device, which is used to transmit sound over long distances. The device plugs into a wall outlet, usually an RJ-11 connector, and often is used in computer systems in conjunction with a modem to facilitate electronic mailing.

8. Modem: This device is required for the conversion of digital signals into analog and vice versa. Before an inquiry can be sent from the user to any manufacturer, the text has to be converted, using the modem,

into analog signals, which is suitable for transfer along the telephone lines. For the inquirer (user) to be able to send message to any manufacturer both user and the manufacturer must have modems installed in their computers. Also, both computers must have dial-up networking set up and the computer to be connected to must be a server.

b) Software :

The software required will be classified into:

a. Operating system

b. Programming languages

c. Application Packages

a. Operating system

Operating systems are the interface architecture in which the user operates. Operating systems configure the hardware of a computer system so that they may run the software designed for them. A number of different operating systems are available. Examples include: MS-DOS, UNIX, PC-DOS, Windows 95, 98, NT, 2000, xp, O/S2 etc.

The operating system required for implementation is Microsoft windows 95 or higher.

Windows 95 (or higher) is a graphical user interface (GUI) that supports multi-tasking and graphical representation applications as well as information.

b. Programming languages: Please refer to chapter 3 for programming language used for this work.

c. Application Packages:

Other application packages to be used in the implementation are:

-Corel Draw

- Window sound recorder

- Windows Media Player

- Paint brush

- Microsoft Word

- Microsoft Graph (or Excel)

Briefly, the CorelDraw is a graphic application package that allows us to create or scan-convert graphic images into normalized device coordinates system (NCDS). We would use it to beautify and enhance the scan-converted images

The Windows sound recorded will be used to record (capture) and play sound (audio) inputs for each product information.

The Windows media player will be used to play back any animation that demonstrates that operation of any selected product/service.

The Paintbrush allows us to edit and enhance the pictures of products that were saved on bitmaps (binary digits).

Microsoft word will be used to create 'Rich text' information such as company profile, product description, and so on. Rich text files are files that contain preserved formatted text.

Microsoft graph (or Microsoft Excel) will be used to generate graphical outputs of users' enquiry (see section 3.2b).

Program Specification

For Hardware and software specifications, please refer to system specifications above.

The program was written in m modules, to explore fully the features offered by object oriented programming languages. The program has two major modules-viz: product/services search and participate.

The Logic: The product/services provide the interface for product search. When a product is specified, the interface will display all manufacturing companies whose product entries match the specification. The user can then select the company of interest and then click on 'Show Catalog', to display the catalog of the product. In the catalog display screen, the picture of the product, its description/specification, and other useful information about the product will be displayed. In addition, information about the location of the company, including its branch offices will be known. The user will be able to make access to the inquiry builder to make an inquiry about the product, and then print it on paper or if possible, sent it across to the manufacture through electronic mail.

The **Participate'** module enables the registration and maintenance of manufacturers, their products, their branch offices and all other relevant information.

Please refer to the 'System Flowchart' for a modular presentation of the pure program.

Description of sample data

The major purpose of this chapter is to study the properties of samples taken from the populations. The desired properties may well depend on the method employed. Here, we are faced with the task of determining the availability of a particular product as well as the concentration of manufacturing industries in an area in order to furnish the consumer with enough facts to aid in decision-making. Possible decisions the consumer can make include-'*market competition may bring about a fall in pace; 'concentration of manufacturers within a defined area could be due to the availability of either raw materials, market or other resources such as labour* and so on.

Hoel (1976) has it that

"A number of consumers of industrial products participate in a buying decision. It has generally been assumed that they will come to their decision after a cool, hard assessment of what is called 'economic considerations', e.g. price, delivery, quality, specification, safety, etc. But certainly there is some evidence to suggest that buyers are subjective in their decision-making and therefore may be more amenable to consumer production techniques.

The statistical test applied in this study is the survey of manufacturing industries and suppliers of industrial products in Nigeria.

A total of 100 questionnaires were administered to respondents within and outside Kaduna.

Table 1: Return rate of questionnaires

Status	No. of Questionnaire	Percentage
Administered	100	100%
Return	93	93%

A total of 93 out of 100 questionnaires was answered and returned by the respondents, therefore the return rate of the questionnaire is 93% (i.e. 93/100 x 100 = 93%). The return rate is good and acceptable for the study.

Classification of data

We are carrying out the survey of discrete variables (i.e. products, companies, state, etc). Discrete variables whose possible values are integers, hence they involve counting rather than measuring. We classify the data gathered from our survey by choosing a set of class interval and then placing each weight in its proper class. An illustration of the results of such a classification procedure for the distribution of a particular product is shown below:

Product: **Gari Processing**

STATE	NO OF MANUFACTURERS
Abia	5
Bauchi	1
Lagos	3
Kano	1
Enugu	25
Kaduna	20

b. Graphical Representation

Frequency distribution is easier to visualize if they are represented graphically. According to Paul G. Hoel (1976), 'the commonly used graphs are 'Histogram' and 'bar chart'. The chart for the frequency distribution illustrated above is shown below
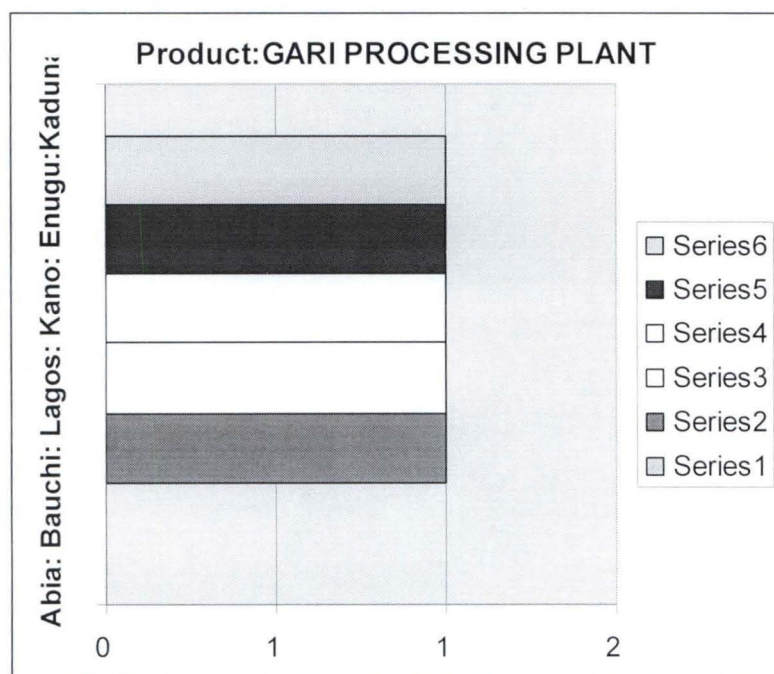
The class boundaries are marked off the x-axis starting and finishing at any convenient points. The frequency corresponding to any class interval is represented by the height of the rectangle whose base is the interval in question. The vertical axis is therefore the frequency axis.

Other Descriptive measure

Another useful set of measurement is the **'mode'.** Paul G. Hoel (1976) defines mode as the 'measurement with the highest (or maximum) frequency. It can be used to determine the most common industrial product in each state. The result presentation is illustrated below:

STATE	COMMON PRODUCT	NO OF MANUFACTURER
Abia	Milling Machine	8
Bauchi	Maize Sheller	4
Kano	Flour Mill	12
Kaduna	Gari Processing Plant	7

4.3 Program Codes/Listing

See appendix c

4.4. Program Output/Result

i.   List of products of a particular company.
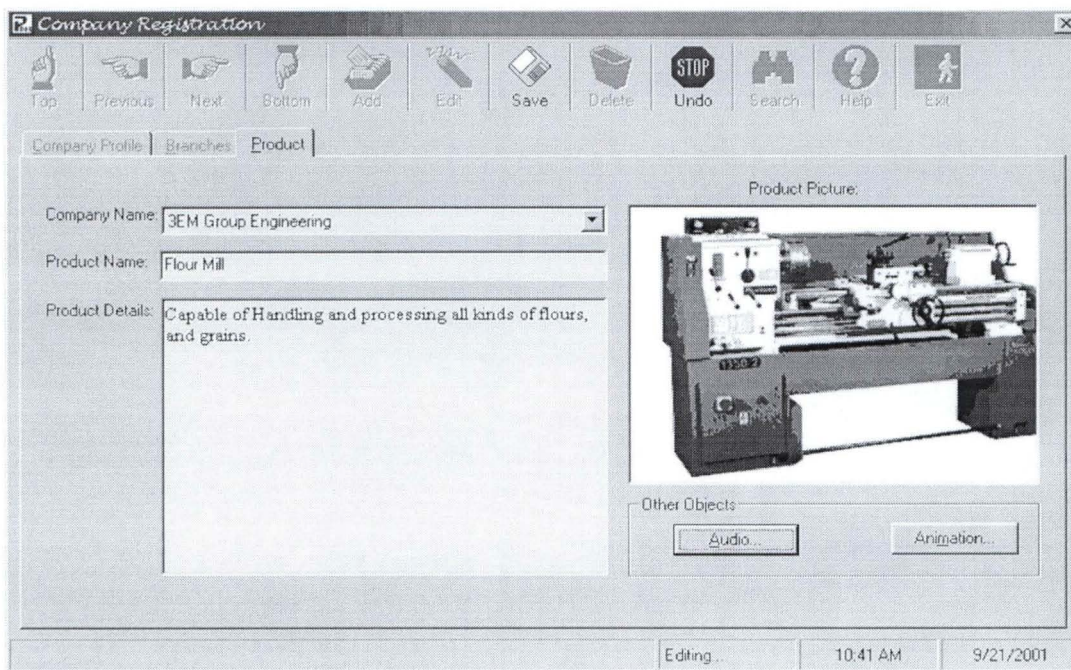
ii.   Distinct list of products in the country.

COMPANY CODE	PRODUCT CODE	PRODUCT NAME	PRODUCT DETAILS
1	1004	Grinding Machine	This is a demonstration program.
1	1005	Dryer	
1	1006	Flour Mill	
1	1007	Oil Press	
1	1008	Cassava Grater	
1	1009	Gari Fryer	
1	1010	Gari Sieve	
1	1011	Dehuller	
2	1012	Cassava Peeler	
2	1013	Cassava Grater	
2	1014	Cassava Press	
2	1015	Maize Sheller	
2	1016	Milling Machine	
2	1017	Palm Kernel Oil Extractor	
2	1018	Palm Kernel Oil Cracker	
3	1019	Cassava Processing Plant	
3	1020	Flour Mill	
3	1021	Vegetable Oil Processing Plant	
4	1022	Palm Fruit Steriliser	
4	1023	Digester Fibre Separator and Nut Crusher	
4	1024	Palm Kernel Cracker	
4	1041	Gari Processing Plant	
4	1042	Baking Oven	
4	1043	Mixer	
4	1044	Maize Sheller	
4	1045	Hammer Mill	
4	1046	Rice Parboiler	
5	1047	Gari Processing Plant	
5	1048	Palm Kernel Oil Extractor	
5	1049	Palm Kernel Cracker	

iii.   Product Details
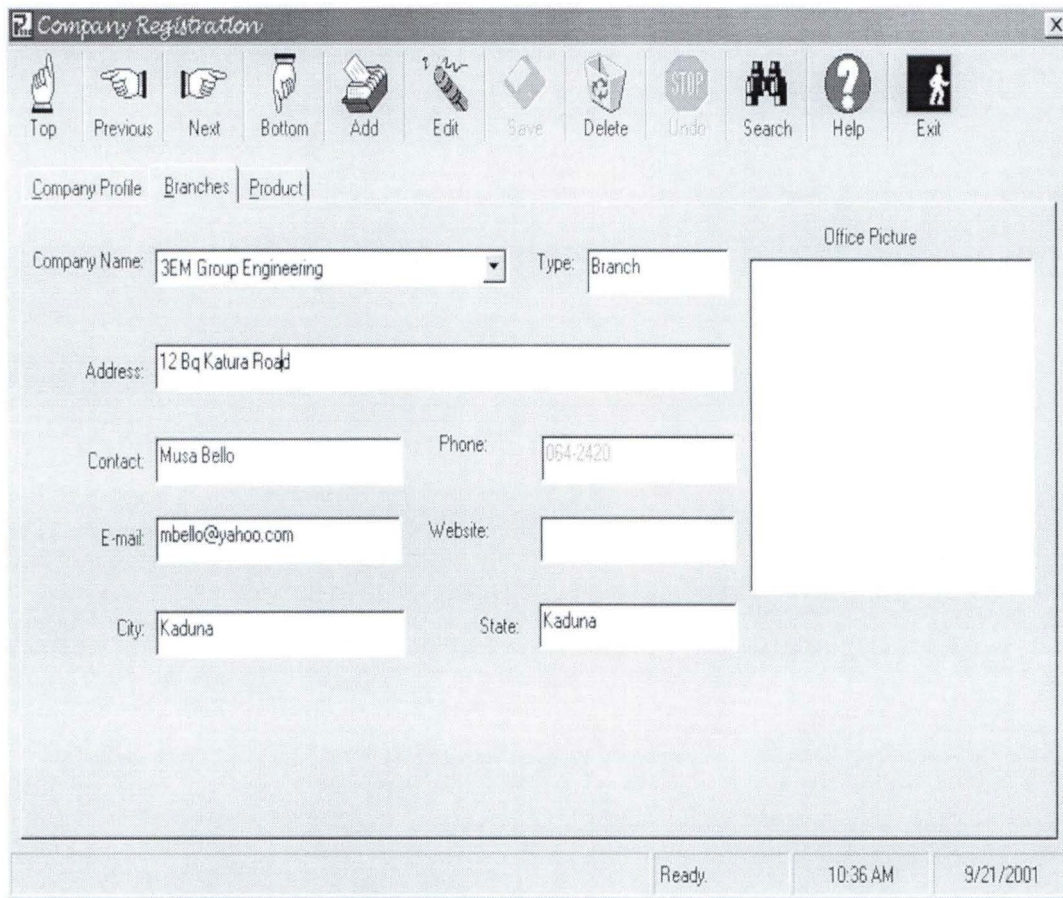
4.5   Discussion of Results

Based on the data collected and classified, and the information presented
in this research, it was discovered that:

1. The manufacturing industries, and suppliers of industrial products are
mostly fabricators and suppliers of agricultural equipment/machinery.

2. The level of local sourcing is drastically low due to lack of appropriate
tools for mass media campaign.

CHAPTER FIVE

5.0   **GENERAL OVERVIEW**

5.1   **Summary**

This research has been an attempt to design a database of industrial products that will guide the consumer by providing a way of getting instant information about Nigerian industries and suppliers of industrial products/services based in Nigeria, their locations, their products and services.

The research work is divided into five chapters in order to ensure adequate coverage of the research topic.

Chapter One presents a synopsis of the research topic, which includes introduction of the topic. It also takes a look on how the local industries can be publicized for better awareness viz-a-viz other foreign industries. This chapter shows the background, objectives, significance and scope of the study.

Chapter Two is essentially on literature review in which relevant institutional framework and the types of media used in awareness generation were briefly examined as well as the limitations of the tools used.

Chapter Three examines the analysis and design of the system, data structure, method of surveys used in the research, the program specification, and the system requirement, which includes hardware and software, for full implementation of the system. It also examines the files created, the output design and the programming language used in line with the cost/benefit analysis.

Chapter Four contains the diagrammatic representation of the program, which is the flowchart, program codes written in Visual Basic (VBasic), a sample program output/result and brief discussion of the result.

5.2   Conclusion

The auditing of indigenous technologies on which the study is based, succinctly highlights, the shortcomings of the Nigerian economy, in terms of the equipment manufacturing infrastructure.

The researcher wishes to underscore the crucial role which both industrial activity and the media have to play in making Nigeria self-reliant. The program developed also highlights yet another useful media, which is even more efficient in awareness generation, as it encompasses the power of computer technology and communication to establish a dialog between the user and any manufacturer.

5.3   Problems Encountered

Believe it or not, a research project of this nature is really tasking. It requires the researcher's determination and commitment in addition to confidence and the ability to convince the respondent. Below are some of the problems encountered.

1.   Lack resources (Hardware facilities), internet accessibility.
2.   It requires time.
3.   Difficulty in standardizing he different structures adopted by the government.

5.4   Recommendation

- Further work can be done.
- Internet facilities should be available and affordable by the government.
- New programming language like visual basic should be taught in our higher institutions.
- Computer awareness through seminars/symposia.
- Government should support (more) local manufactures.
- There should be awareness generated through the media and other means.
- The survey should be carried out periodically, say, quarterly in order to incorporate emerging manufacturers.

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APPENDICES

SAMPLE QUESTIONNAIRE

John Nnanna Iteogu

Department of Maths & Computer,

Federal University of Technology, Minna

15th December, 2005

To:...

....

....

I am a Postgraduate student of Computer Science department in Federal University of Technology, Minna carrying out a survey of local manufacturing industries (fabricators of industrial products) to enable me design a computer-assisted program that will guide consumers on how to source for the products and services of these companies. This is in line with the requirements for the award of Postgraduate Diploma certificate in Computer Science.

Your company has been identified as having satisfied the criteria for the selection of companies that will be considered in the research work. You are, therefore, required to furnish me with relevant information about your company by filling this form.

Your co-operation is highly needed and the information you provide will be treated with full confidentiality.

Thank you

1. **Company Profile:**

Name	
Acronym	
Address	
Contact	
City	State
Tel	
Email	Website
Remarks (please, add extra sheet if space is not sufficient)	

Branches:

Please make extra copies of this form and enter additional Branches

Branch No.:	
Address	
Contact	
City	State
Tel	
Email	Website
Remarks (please, add extra sheet if	

space is not sufficient)	

Branch No.:			
Address			
Contact			
City		State	
Tel			
Email		Website	
Remarks (please, add extra sheet if space is not sufficient)			

Products:

Please make extra copies of this form and enter additional products

Product Code	
Product Name	
Category	
Product Details (please, add extra sheet if space is not sufficient)	
Product Picture	*(please attach one picture for the product and write the product code behind it)*
Advert Code	

Advert Details

We attach an advert each for each product as indicated by the *Advert Code* in the products list

Summary

Total Number of Branches	
Total Number of Products	
Total Number of Adverts	
Total Number of Pictures	

Also enclosed are:

_____

_____

_____

_____

The Product Details/Write-ups are enclosed:

[ ]   On Floppy Diskette (s)   [ ]   On Paper

_____   _____

Manager's Sign   Date

System Flowchart

```
                                    ┌──────────────┐
                                    │  Main Menu   │
                                    └──────┬───────┘
        ┌──────────────┬──────────────┬───┴────────┬──────────────┬──────────────┐
 ┌──────┴──────┐ ┌─────┴─────┐ ┌──────┴──────┐ ┌───┴───┐ ┌────────┴─────┐ ┌──────┴──┐
 │    Find     │ │   About   │ │  Company    │ │ Help  │ │ Popup Report │ │  Quit   │
 │Product/Service│             │ Registration│ └───────┘ └──────────────┘ └─────────┘
 └──────┬──────┘               └──────┬──────┘
 ┌──────┴──────┐         ┌────────────┼────────────┐
 │  Enquiry    │    ┌────┴────┐  ┌────┴────┐  ┌─────┴───┐
 │  Generator  │    │ Company │  │Products │  │ Branch  │
 └──────┬──────┘    │  Reg.   │  │  Reg.   │  │  Reg.   │
 ┌──────┴──────┐    └─────────┘  └─────────┘  └─────────┘
 │   Product   │
 │   Catalog   │
 └──────┬──────┘
 ┌──────┼──────┐
┌┴───┐ ┌┴───┐ ┌┴────┐
│Prod│ │Rep │ │Prod │
```

Main Menu

- Find Product/Service
  - Enquiry Generator
    - Product Catalog
      - Product Inquiry
      - Report
      - Product Distribution
- About
- Company Registration
  - Company Reg.
  - Products Reg.
  - Branch Reg.
- Help
- Popup Report
  - Products List
  - Company List
  - Product Concentration
  - Company Branches
- Quit

- 51 -

Appendix C:

PROGRAM CODES/LISTING

Option Explicit

```
Const EM_UNDO = &HC7
Public Declare Function OSWinHelp% Lib "user32" _
    Alias "WinHelpA" (ByVal hwnd&, ByVal HelpFile$, ByVal wCommand%,
    dwData As Any)


Public Declare Function SendMessagebyString& Lib "user32" _
    Alias "SendMessageA" (ByVal hwnd As Long, _
    ByVal wMsg As Long, ByVal wParam As Long, _
    ByVal lParam As String)

'Public Declare Function SendMessage Lib "user32" Alias "SendMessageA" (ByVal
    hwnd As Long, ByVal wMsg As Long, ByVal wParam As Long, lParam As Any) As
    Long

Public Const LB_SELECTSTRING = &H18C
Public gFindString As String
Public gFindPROD As String
Public gFindCO As String
Public Const gDatabaseName = "C:\Procat\vb\ProCat.mdb"


Public dbProcat As Database
Public rsCompany As Recordset
Dim rsBranches As Recordset
Dim rsProducts As Recordset


' Recorsets to be used in the Catalogue display section
'Dim rsCatProd As Recordset
```

```
'Dim rsCatCo As Recordset
'Dim rsCatBr As Recordset
'Dim rsCatAdv As Recordset


' Global Variables for passing Co_Code, Co_Name, PCode, Pname
Public filterProd As String
Public gcode As String
Public gname As String
'Public gpcode As String
'Public gpname As String


Public strCatCo As String
Public iProductTyped As Integer
Public lAbu As Long



Public Const App_Name = "A Database Of Industrial Products in Nigeria"
Public dotip As Boolean    'Determines the status of tipofday
Public SoundOn As Boolean   ' holds the status of sound



Sub main()
SoundOn = True
Mmenu.Show
End Sub


Public Function openTheDbase() As Boolean
Dim dbpath As String
On Error GoTo dbErrors
dbpath = App.Path & "\Procat.mdb"
Set dbProcat = DBEngine.Workspaces(0).OpenDatabase(dbpath, False)
Set rsCompany = dbProcat.OpenRecordset("Company", dbOpenTable)
openTheDbase = True
```

```
Exit Function

dbErrors:
openTheDbase = False
MsgBox (Err.Description)


End Function


Public Sub Hello()
On Error GoTo err_NewTable
Dim sMsg As String
Dim sMas As String
Dim sVariable As String
Dim lDate As Long
Dim adoconnect As ADODB.Connection
Dim adorecordset As ADODB.Recordset
"Dim adocommand As ADODB.Command
Set adoconnect = New ADODB.Connection
"Set adorecordset = New ADODB.Recordset
'sVariable = "'" & frmmanufacturer!Text8.Text & "'"
sVariable = "'" & frmPrdCatalog!lblprod.Caption & "'"
'ElseIf iDrugDetailDate = 1 Then
'sMas                    =                    "select           drugs.[Drug
   Name],additionaldrug.DrugID,additionaldrug.Date,additionaldrug.Outstandingquantit
   y,additionaldrug.[Additional
   Quantity],additionaldrug.Totalquantity,additionaldrug.[Unit
   cost],manufac.ManName,additionaldrug.AdditionalDrugID,drugs.Measure         INTO
   DrugDetailTable        from        AdditionalDrug,drugs,manufac            where
   drugs.drugid=additionaldrug.drugid   and   manufac.manid=additionaldrug.manid"   '
   order by additionaldrug.date"
sMas = "SELECT  BRANCH.CO_CODE,  BRANCH.STATE,  PRODUCT.PNAME,
   PRODUCT.CO_CODE AS Expr1 into hello FROM PRODUCT, BRANCH WHERE
   PRODUCT.CO_CODE = BRANCH.CO_CODE AND PRODUCT.PNAME =" &
   sVariable
```

```vb
sMsg     =     "Provider=Microsoft.Jet.OLEDB.3.51;Persist     Security     Info=False;Data
    Source=C:\ProCat\VB\ProCat.mdb"
 adoconnect.Open sMsg
" creat the table
 adoconnect.Execute sMas


"delete the table
'adoconnect.Execute "DROP TABLE [coolio]"


' adoconnect.Close
 adoconnect.Close
 Exit Sub
err_NewTable:
' MsgBox Err.Description
If Err.Number = -2147217900 Then
'delete the coolio table
adoconnect.Execute "DROP TABLE [hello]"
Resume
'Else
'MsgBox Err.Description
'MsgBox Err.Number
Exit Sub
End If
End Sub


Public Sub delHello()
'On Error GoTo err_NewTable
Dim sMsg As String
Dim sMas As String
Dim sVariable As String
Dim lDate As Long
Dim adoconnect As ADODB.Connection
Dim adorecordset As ADODB.Recordset
"Dim adocommand As ADODB.Command
```

```
Set adoconnect = New ADODB.Connection
"Set adorecordset = New ADODB.Recordset
'sVariable = """ & frmmanufacturer!Text8.Text & """
sVariable = """ & frmPrdCatalog!lblprod.Caption & """
'ElseIf iDrugDetailDate = 1 Then
'sMas                   =                "select                drugs.[Drug
   Name],additionaldrug.DrugID,additionaldrug.Date,additionaldrug.Outstandingquantit
   y,additionaldrug.[Additional
   Quantity],additionaldrug.Totalquantity,additionaldrug.[Unit
   cost],manufac.ManName,additionaldrug.AdditionalDrugID,drugs.Measure   INTO
   DrugDetailTable     from     AdditionalDrug,drugs,manufac     where
   drugs.drugid=additionaldrug.drugid  and  manufac.manid=additionaldrug.manid"  '
   order by additionaldrug.date"
'sMas = "SELECT  BRANCH.CO_CODE,  BRANCH.STATE,  PRODUCT.PNAME,
   PRODUCT.CO_CODE AS Expr1 into hello FROM PRODUCT, BRANCH WHERE
   PRODUCT.CO_CODE = BRANCH.CO_CODE  AND  PRODUCT.PNAME =" &
   sVariable
sMsg   =   "Provider=Microsoft.Jet.OLEDB.3.51;Persist   Security   Info=False;Data
   Source=C:\My Documents\ProCat\VB\ProCat.mdb"
 adoconnect.Open sMsg
adoconnect.Execute "DROP TABLE [hello]"


' adoconnect.Close
 adoconnect.Close


End Sub
Private Sub cmdOK_Click()
Unload Me
End Sub


Private Sub Form_Load()
aboutsnd
End Sub
Private Sub Form_Unload(Cancel As Integer)
```

```vb
    MMControl1.Command = "Close"
End Sub


Private Sub aboutsnd()
  ' Set properties needed by MCI to open.
  MMControl1.Notify = False
  MMControl1.Wait = True
  MMControl1.Shareable = False
  MMControl1.DeviceType = "Sequencer"
  MMControl1.FileName = "C:\ProCat\Muzik\DONTWORR.mid"


  ' Open the MCI WaveAudio device.
  MMControl1.Command = "Open"
  MMControl1.Command = "Play"


End Sub


Private Sub MMControl1_Done(NotifyCode As Integer)
aboutsnd
End Sub


Private Sub Timer1_Timer()
  If MMControl1.Silent = True Then
   MMControl1.Command = "Open"
   MMControl1.Command = "Play"
  End If
End Sub


Private Sub cmdAdd_Click()
  datPrimaryRS.Recordset.AddNew
End Sub


Private Sub cmdDelete_Click()
```

```vb
    With datPrimaryRS.Recordset
      .Delete
      .MoveNext
      If .EOF Then .MoveLast
    End With
End Sub


Private Sub cmdRefresh_Click()
  'This is only needed for multi user apps
  datPrimaryRS.Refresh
End Sub


Private Sub cmdUpdate_Click()
  datPrimaryRS.UpdateRecord
  datPrimaryRS.Recordset.Bookmark = datPrimaryRS.Recordset.LastModified
End Sub


Private Sub cmdClose_Click()
  Screen.MousePointer = vbDefault
  Unload Me
End Sub


Private Sub datPrimaryRS_Error(DataErr As Integer, Response As Integer)
  'This is where you would put error handling code
  'If you want to ignore errors, comment out the next line
  'If you want to trap them, add code here to handle them
  MsgBox "Data error event hit err:" & Error$(DataErr)
  Response = 0  'Throw away the error
End Sub


Private Sub datPrimaryRS_Reposition()
  Screen.MousePointer = vbDefault
  On Error Resume Next
  'This will display the current record position for dynasets and snapshots
```

```vb
    datPrimaryRS.Caption = "Record: " & (datPrimaryRS.Recordset.AbsolutePosition +
      1)
End Sub


Private Sub datPrimaryRS_Validate(Action As Integer, Save As Integer)
  'This is where you put validation code
  'This event gets called when the following actions occur
  Select Case Action
    Case vbDataActionMoveFirst
    Case vbDataActionMovePrevious
    Case vbDataActionMoveNext
    Case vbDataActionMoveLast
    Case vbDataActionAddNew
    Case vbDataActionUpdate
    Case vbDataActionDelete
    Case vbDataActionFind
    Case vbDataActionBookmark
    Case vbDataActionClose
      Screen.MousePointer = vbDefault
  End Select
  Screen.MousePointer = vbHourglass
End Sub


Private Sub Form_Unload(Cancel As Integer)
  Screen.MousePointer = vbDefault
End Sub


Private Sub oleFields_DblClick(Index As Integer)
  'This is the way to get data into an empty ole control
  ' and have it saved back to the table
  oleFields(Index).InsertObjDlg
End Sub


Private Sub Command1_Click()
```

```vb
Unload Me
End Sub


Private Sub Form_Load()
lblpname.Caption = frmPrdCatalog!lblprod.Caption
lblcompany.Caption = Trim(frmPrdCatalog!lblco_name.Caption)
lblbranch.Caption = Trim(frmPrdCatalog!txtBaddress.Text)
lblcity.Caption = Trim(frmPrdCatalog!txtBCity.Text)
lblstate.Caption = Trim(frmPrdCatalog!txtBState.Text)
lblContactperson.Caption = frmPrdCatalog!txtBcontact.Text


End Sub


Private Sub Form_Unload(Cancel As Integer)
frmPrdCatalog.Visible = True
End Sub


Dim db1 As Database
Dim rs As Recordset
Dim SQLStr As String


Private Sub executeqry()
List1.Clear


dtafind.RecordSource = "Select * from company " & _
"where ucase(co_name) like '*" & UCase(Trim(txtfindcompany)) & "*' and co_code in
   (" & _
"Select co_code from product where ucase(pname) like '*" & UCase(Trim(txtfind)) &
   "*' )" & " order by co_name"


dtafind.Refresh
If (dtafind.Recordset.RecordCount = 0) Then
```

```vb
    List1.AddItem "Sorry, no company has met this condition."
    List1.Enabled = False
    cmdCatalog.Enabled = False
Else
    Screen.MousePointer = vbHourglass
    dtafind.Recordset.MoveFirst
    While Not dtafind.Recordset.EOF
        List1.AddItem dtafind.Recordset.Fields("Co_Name") & ""
        dtafind.Recordset.MoveNext
    Wend
 DoEvents
lblcount = dtafind.Recordset.RecordCount & " Companies Found."

List1.Enabled = True
List1.SetFocus
List1.Selected(0) = True
cmdCatalog.Enabled = True

End If

Screen.MousePointer = vbDefault
List1.Refresh

setstatus

End Sub


Private Sub cmdCatalog_Click()
set_CatRecs
End Sub

Private Sub cmdHelp_Click()
Helpfind
```

```
End Sub


Private Sub cmdMenu_Click()
Unload Me
End Sub


Private Sub cmdRefresh_Click()
List1.Clear
txtfind.Text = ""
txtfindcompany.Text = ""
txt.Caption = ""
lblcount.Caption = ""
cmdCatalog.Enabled = False
txtfind.SetFocus
End Sub


Private Sub cmdsrchbtn_Click()
executeqry
End Sub


Private Sub Form_Activate()
cmdRefresh_Click
End Sub


Private Sub setstatus()

End Sub


Private Sub List1_Click()
If txtfind.Text = "" Then
iProductTyped = 2
End If
txt.Caption = List1
txtfindcompany = List1
```

```
End Sub

Private Sub List1_DblClick()
set_CatRecs
End Sub

Private Sub List1_GotFocus()
List1_Click
End Sub
Private Sub set_CatRecs()
    Me.Visible = False
    frmPrdCatalog.Show vbModal

End Sub


Private Sub txtfind_Change()
'If keyAscii = vbreturn Then
'   SendKeys "{TAB}"
'   keyAscii = 0
'End If
iProductTyped = 1
End Sub

Private Sub txtfindcompany_Change()
'If keyAscii = vbreturn Then
'   SendKeys "{TAB}"
'   keyAscii = 0
' End If

End Sub
Private Sub Helpfind()
Dim nret As Integer
```

```vba
If Len(App.HelpFile) = 0 Then
    MsgBox "Sorry, Cannot display Help - File is missing", vbInformation, "Pro-DB
    Message"
Else
    On Error Resume Next
    nret = OSWinHelp(Me.hwnd, App.HelpFile, 3, 0)
    If Err Then
        MsgBox Err.Description
    End If
End If


End Sub


Dim Response As Boolean
'Dim dotip As Boolean
Dim now_exit As Boolean




Private Sub cmdHelp_Click()
    HelpContent
End Sub


'Dim prosound As MMControl

Private Sub cmdQuit_Click()
Dim Response As Integer
Response = MsgBox("     Okay, do you want to Quit Pro-DB?      ", vbYesNo, "End
    Product Search")
If Response = 6 Then
    now_exit = True
    Unload Me
End If
End Sub
```

```vb
Private Sub cmdApply_Click()
frmmanufacturer.Show vbModal
End Sub


Private Sub cmdCredit_Click()
stopsound
frmAbout.Show vbModal
playsound
End Sub


Private Sub cmdSearch_Click()
frmfind2.Show vbModal
End Sub


Private Sub Command1_Click()
frmfind2.Show vbModal
End Sub



Private Sub Command2_Click()
Dim Response As Integer
Response = MsgBox("     Okay, do you want to Quit Pro-DB?       ", vbYesNo, "End
  Product Search")
If Response = 6 Then
  now_exit = True
  Unload Me
End If
End Sub


Private Sub Form_Activate()
If dotip = True Then
  frmTip.Show
End If
```

```
' frmTip.Show vbModal

End Sub

Private Sub Form_GotFocus()
'playsound
End Sub

Private Sub Form_Load()
dotip = True
now_exit = False
playsound
End Sub

Private Sub Form_LostFocus()
stopsound
End Sub

Private Sub Form_MouseDown(Button As Integer, Shift As Integer, x As Single, Y As
    Single)
If Button = vbRightButton Then
    PopupMenu mnuPopup
End If

End Sub

Private Sub Form_Unload(Cancel As Integer)
stopsound
End Sub

Public Sub playsound()
    If SoundOn = True Then
```

```vbnet
                    needed by MCI to open.
              otify = False
          d.Wait = True
       und.Shareable = False
     osound.DeviceType = "Sequencer"
   prosound.FileName = "C:\ProCat\Muzik\celebrate.mid"

   ' Open the MCI WaveAudio device.
   prosound.Command = "Open"
   prosound.Command = "Play"
   Else
   stopsound
   End If

End Sub


Public Sub bcksound_Timer()


End Sub
Private Sub stopsound()
   prosound.Command = "Close"
End Sub


Private Sub mnuBranches_Click()
dtrCompanyBranch.Show
End Sub


Private Sub mnuCompanyPeState_Click()
dtrTotalCompanyPerState.Show
End Sub


Private Sub mnuEquipmentsPerCompany_Click()
```

```vb
dtrCompanyProduct.Show
End Sub


Private Sub mnuShowAllProduct_Click()
dtrAllProducts.Show
End Sub


Private Sub popAbout_Click()
frmAbout.Show vbModal
End Sub


Private Sub popHelp_Click()
HelpContent
End Sub


Private Sub prosound_Done(NotifyCode As Integer)
If now_exit = False Then
    stopsound
    playsound
End If
End Sub


Private Sub wakebuttons()
cmdApply.Enabled = True
cmdSearch.Enabled = True
cmdCredit.Enabled = True
cmdQuit.Enabled = True
cmdHelp.Enabled = True


End Sub
Private Sub sleepbuttons()
cmdApply.Enabled = False
cmdSearch.Enabled = False
cmdCredit.Enabled = False
```

```
cmdQuit.Enabled = False
cmdHelp.Enabled = False
End Sub


Public Sub HelpContent()
Dim nret As Integer


If Len(App.HelpFile) = 0 Then
    MsgBox "Sorry, Cannot display Help - File is missing", vbInformation, "Pro-DB
    Message"
Else
    On Error Resume Next
    nret = OSWinHelp(Me.hwnd, App.HelpFile, 3, 0)
    If Err Then
        MsgBox Err.Description
    End If
End If


End Sub


Private Sub sndon_Click()
If sndon.Checked = True Then
    sndon.Checked = False
    SoundOn = False
Else
    sndon.Checked = True
    SoundOn = True
End If
playsound
End Sub
```