Internship Report

On

Implementation of ERP System with SCM in Bangla Trac Limited

Submitted To

Dr. Md. Mamun Habib
Associate Professor
Department of BRAC Business School
BRAC University

Submitted By

Md. Itrat Hossain Jubery
ID: 14364075

DateofSubmission:23 August,2017

LETTER OF SUBMISSION

August 23, 2017

To

The Supervisor

Department of BRAC Business School

BRAC University

Subject: Regarding submission of internship report titled "Implementation of ERP System with SCM in Bangla Trac Ltd."

Dear Sir,

I have the honor to let you know that I have accomplished my internship report titled on "Implementation of ERP System with SCM in Bangla Trac Ltd." It gives me immense pleasure to submit the report before you. I made every endeavor to prepare this report and tried my level best to accumulate relevant and insightful information. It is a great experience for me to work with this topic. I have tried to make the report vivid and comprehensive within the scheduled time and limited resources.

If you need any further information to evaluate the internship report, it would be my enormous pleasure to furnish you the same. Your acceptance and appreciation would surely inspire me.

Sincerely yours,

_____

Md. Itrat Hossain Jubery

ID:14364075

Semester: Summer 2017

Dept of BBS, BRACU

<u>DECLARATION</u>

I do hereby solemnly declare that the work presented in this internship report has been carried out by me and has not been previously submitted to any other University/Organization for an academic qualification/certificate/degree.

The work that I have presented does not breach any existing copyright and no portion of this report is copied from any work done earlier for a degree or otherwise.

_____

Md. Itrat Hossain Jubery

ID: 14364075

Semester: Summer 2017

Dept. of BBS, BRACU

SUPERVISOR CERTIFICATION

This is to certify that**Mr. Md. Itrat Hossain Jubery;** Student ID No.:**14364075**; has done internship under my supervision. It is a part of the fulfillment of Masters of Business Administration (MBA) programin Department of BRAC Business School, BRAC University. The internship report titled "Implementation of ERP System with SCM in Bangla Trac Ltd." can be submitted for defense.

_____

Dr. Md. Mamun Habib
Associate Professor
Department of BRAC Business School
BRAC University

ACKNOWLEDGEMENT

First of all, I would like to express my infinite gratefulness to Almighty Allah whose supreme mercy help me to complete this report successfully. In addition, I would to extend my indebtedness to my parents. Their encouragement and support brought me here.

Obviously I wish to express my heartiest thanks, and a deep sense of gratitude to my supervisor Mr. Md. Mamun Habib, Associate Professor, Department of BRAC Business School, BRAC University, for his deep insights, unequivocal and continuous guidance, valuable suggestions and encouragement in every stage of my progress.

I am also grateful to my colleagues for their nice support and inspiration. I wish to complement my respective teachers of the department for providing such a nice environment for study.

It is my prayer that the motive behind this whole project will be fulfilled.

Md. Itrat Hossain Jubery
Date: August 23, 2017

Executive Summary

Theobjectiveofthisreportistostudytheimplementationof ERPsystem with SCMinBangla Trac Ltd.andcompare between pre ERP system and post ERP system within this organization in terms of performance enhancement.Theimplementationaimstohelp organizationsimprovetheir employees' effectiveness & efficiency,identifysystemwideopportunitiestoshare,harmonizeandstandardizeERP operationswithintheorganizations;shareservicesormergecomponentsofsystemsinor derto maximize synergiesacrossthesystem;andstrengthenthepositionofamong organizationsin country market.Indoingso,thereportassessestheefficiency,effectiveness,valueadded,impact ,usersatisfaction,coherenceandsustainabilityofERPsystems.

.

Table of Content

List of Figures

List of Tables

CHAPTER ONE

INTRODUCTION

1.1Background

An Enterprise Resource Planning (ERP) system is a multi-module transaction-based application software that helps organizations to manage the vital parts of the business. ERP collects, manages and distributes information across functional boundaries and helps break down information-those barriers that stand in the way of full cooperation between production, materials, planning, engineering, finance and sales/marketing. The resulting higher quality, reduced time-to-market, shortened lead times, higher productivity and lowered costs can help improve customer service and increase sales and market share as well as margins.Measurements, analysis and simulation capabilities can help companies plan better and react sooner and more effectively to changes in demand, competitive actions, and supply chain disruptions.Modern ERP systems are built for the internet-enabled world with e-commerce capabilities and provision for integration and collaboration with supply chain partners, customer portals, and enhanced tracking of incoming material and outgoing product to extend the visibility and control. Many companies are challenged by the continually changing requirements of internet-based business processes and find that their current ERP system is not able to take them where they need to go. It is hard to put a value on the ability to take advantage of new and evolving e-business imperatives or the cost of not being able to keep up with (or perhaps even lead) the competition.

1.2 Rationale of theStudy

The Implementation of new technologies and manufacturing philosophies in industrial sector with good success rates is crucial in a nation's economic growth and prosperity. ERP is one such system for which a lot of resistance is offered in organizations for implementation due to higher investments and more failures associated with it. The purpose of this project to provide an ERP (Enterprise Resource Planning) solution to Bangla Trac Limited (Bangla CAT), as a result Bangla CAT will be benefited in several ways which is described as in Appendix.

1.3 Objective of the Study

The study of ERP implementation in Bangla Trac Limited is necessary to enlarge Bangla Trac Limited with proper goal setting with adequate information. The main objectives of this study are:

- The implementation of ERP process in Bangla Trac Limited.

- Comparison between pre ERP system and post ERP system in terms of performance enhancement.

1.4 Research Methodology

The term 'methodology' means an "analysis of and rationale for the particular method or methods used. For this research pragmatic approach or mixed method is applied.

1.4.1 Pragmatic Approach or Mixed Method for Research

The pragmatic approach to science involves using the method which appears best suited to the research problem and not getting caught up in philosophical debates about which is the best approach. Pragmatic researchers therefore grant themselves the freedom to use any of the methods, techniques and procedures typically associated with quantitative or qualitative research. They recognize that every method has its limitations and that the different approaches can be complementary.

They may also use different techniques at the same time or one after the other. For example, they might start with face-to-face interviews with several people or have a focus group and then use the findings to construct a questionnaire to measure attitudes in a large scale sample with the aim of carrying out statistical analysis.

Depending on which measures have been used, the data collected is analyzed in the appropriate manner. However, it is sometimes possible to transform qualitative data into quantitative data and vice versa although transforming quantitative data into qualitative data is not very common.

Being able to mix different approaches has the advantages of enabling triangulation. Triangulation is a common feature of mixed methods studies. It involves, for example:

- the use of a variety of data sources (data triangulation)

- the use of several different researchers (investigator triangulation)

- the use of multiple perspectives to interpret the results (theory triangulation)

- the use of multiple methods to study a research problem (methodological triangulation)

In some studies, qualitative and quantitative methods are used simultaneously. In others, first one approach is used and then the next, with the second part of the study perhaps expanding on the results of the first. For example, a qualitative study involving in-depth interviews or focus group discussions might serve to obtain information which will then be used to contribute towards the development of an experimental measure or attitude scale, the results of which will be analyzed statistically.

1.4.2 Data Sources

For preparing the research paper both primary and secondary data have been used:

- ➢ Primary sources:

  - Conversation with the core them member as well as operational line manager.

  - ERP local consultant and IFS consultant

- ➢ Secondary Sources:

  - Process flow diagram of organization

  - Information about the organization from the company profile.

  - Web site of ERP software.

1.4.3 Data Preparation & Analysis Method

Data Preparation is the process of collecting, cleaning, and consolidating data into one file or data table for use in analysis. The process of preparing data generally entails correcting any errors (typically from human and/or machine input), filling in nulls and incomplete data, and merging data from several sources or data formats.

The process of data preparation typically involves:

- **Data Analysis** – The data is audited for errors and anomalies to be corrected. For large datasets, data preparation applications prove helpful in producing metadata and uncovering problems.

- **Creating an Intuitive Workflow** – A workflow consisting of a sequence of data prep operations for addressing the data errors is then formulated.

- **Validation**– The correctness of the workflow is next evaluated against a representative sample of the dataset. This process may call for adjustments to the workflow as previously undetected errors are found.

- **Transformation** – Once convinced of the effectiveness of the workflow, transformation may now be carried out, and the actual data prep process takes place.

- **Backflow of Cleaned Data** – Finally, steps must also be taken for the clean data to replace the original dirty data sources.

1.5 Limitation of the Study

Like any other articles and thesis, this study is not free from limitation. Highest level of efforts has been given to overcome these limitations through extensive study. The major limitations are given below:

- ERP software is a confidential issue and it does not disclose to others.

- ERP software controls all business process of an organization, so study on every process is time consuming.

- Relevant data and document collection were difficult.

1.6 Organization of the Report

As a part of the MBA program, all students are required to complete three months' internship program or alternative submit a thesis paper. I have been assigned to submit a thesis paper. This report is the outcome of my assigned thesis paper.

The topic of my thesis is **"Implementation of ERP System with SCM in Bangla Trac Limited"**

CHAPTER TWO

LITERATURE REVIEW

2.1 Enterprise Resource Planning (ERP)

Enterprise resource planning (ERP) integrates internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc. ERP systems automate this activity with an integrated software application. Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders. ERP systems can run on a variety of hardware and network configurations, typically employing a database as a repository for information. It enables companies to automate activities such as product planning, purchasing, inventory management, supplier management, and order tracking. More recently it has evolved to include other applications that are used in accounting and human resource functions. More generally, it is a method for the effective planning and control of all resources needed to take, make, ship, and account for customer orders in a manufacturing, distribution, or service company. This process increases company communication and most of all it increases efficiency that is if it is properly installed and implemented.
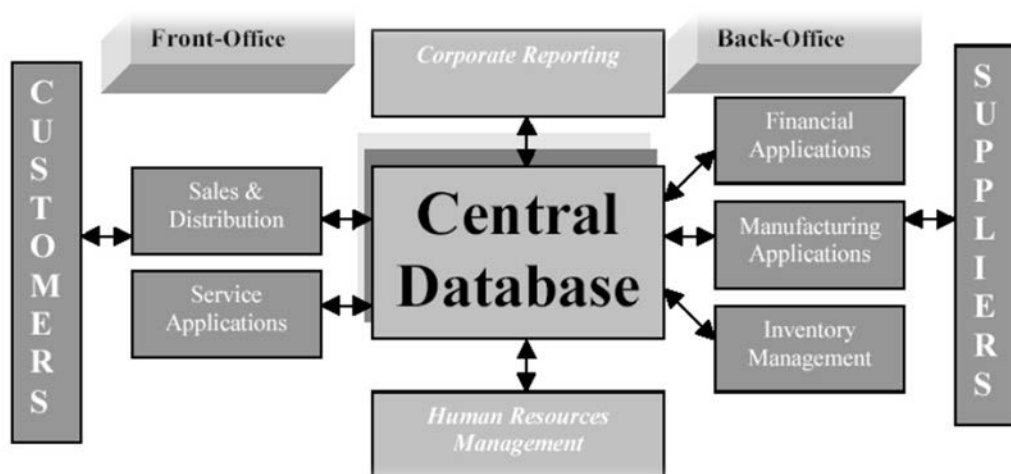

Figure 2.1: ERP System Concepts (Source: Bangla CAT ERP Division)

2.2 ERP System Evolution

The focus of manufacturing systems in the 1960's was on inventory control. Most of the software packages then (usually customized) were designed to handle inventory based on traditional inventory concepts. In the 1970's the focus shifted to MRP (Material Requirement Planning) systems which translated the Master Schedule built for the end items into time-phased net requirements for the sub-assemblies, components and raw materials planning and procurement. In the 1980's the concept of MRP-II (Manufacturing Resources Planning)

evolved which was an extension of MRP to shop floor and Distribution management activities. In the early 1990's, MRP-II was further extended to cover areas like Engineering, Finance, Human Resources, Project Management etc i.e. the complete gamut of activities within any business enterprise. Hence, the term ERP (Enterprise Resource Planning) was coined. Not all ERP packages were developed from a manufacturing core. Vendors variously began with accounting, maintenance and human resources. By the mid–1990s ERP systems addressed all core functions of an enterprise. Beyond corporations, governments and non–profit organizations also began to employ ERP systems.

2.3 Implementation of ERP

ERP's scope usually implies significant changes to staff work processes and practices. Generally, three types of services are available to help implement such changes—consulting, customization, and support. Implementation time depends on business size, number of modules, customization, the scope of process changes, and the readiness of the customer to take ownership for the project. Modular ERP systems can be implemented in stages. The typical project for a large enterprise consumes about 14 months and requires around 150 consultants. Small projects can require months; multinational and other large implementations can take years. Customization can substantially increase implementation times.

2.3.1 Modularity

Most systems are modular to permit automating some functions but not others. Some common modules, such as finance and accounting, are adopted by nearly all users; others such as human resource management are not. For example, a service company probably has no need for a manufacturing module. Other companies already have a system that they believe to be adequate. Generally speaking, the greater the number of modules selected, the greater the integration benefits, but also the greater the costs, risks and changes involved.

2.3.2 Process Preparation

Implementing ERP typically requires changing existing business processes. Poor understanding of needed process changes prior to starting implementation is a main reason for project failure. It is therefore crucial that organizations thoroughly analyze business processes before implementation. This analysis can identify opportunities for process modernization. It also enables an assessment of the alignment of current processes with those provided by the ERP system. Research indicates that the risk of business process mismatch is decreased by:

- Linking current processes to the organization's strategy;
- Analyzing the effectiveness of each process;
- Understanding existing automated solutions.

2.3.3 Configuration

Configuring an ERP system is largely a matter of balancing the way the customer wants the system to work with the way it was designed to work. ERP systems typically build many changeable parameters that modify system operation. For example, an organization can select the type of inventory accounting—FIFO or LIFO—to employ, whether to recognize revenue by geographical unit, product line, or distribution channel and whether to pay for shipping costs when a customer returns a purchase.

2.3.4 Customization

ERP systems are theoretically based on industry best practices and are intended to be deployed "as is". ERP vendors do offer customers configuration options that allow organizations to incorporate their own business rules but there are often functionality gaps remaining even after the configuration are complete. ERP customers have several options to reconcile functionality gaps, each with their own pros/cons. Technical solutions include rewriting part of the delivered functionality, writing a home-grown bolt-on/add-on module within the ERP system, or interfacing to an external system. All three of these options are varying degrees of system customization, with the first being the most invasive and costly to maintain. Alternatively, there are non-technical options such as changing business practices and/or organizational policies to better match the delivered ERP functionality.

2.3.5 Data Migration

Data migration is the process of moving/copying and restructuring data from an existing system to the ERP system. Migration is critical to implementation success and requires significant planning. Unfortunately, since migration is one of the final activities before the production phase, it often receives insufficient attention. The following steps can structure migration planning:

- ➢ Identify the data to be migrated
- ➢ Determine migration timing
- ➢ Generate the data templates
- ➢ Freeze the toolset
- ➢ Decide on migration-related setups
- ➢ Define data archiving policies and procedures.

2.4 Selection of ERP

Once the BPR is completed the next task is to evaluate and select a suitable package for implementation. Evaluation of the right ERP package is considered as more crucial step. Evaluation and selection involves:

- ➢ checking whether all functional aspects of the Business are duly covered
- ➢ checking whether all the business functions and processes are fully integrated
- ➢ checking whether all the latest IT trends are covered

➢ checking whether the vendor has customizing and implementing capabilities
➢ checking whether the business can absorb the cost
➢ checking whether the ROI is optimum

2.5 Characteristics of ERP

ERP systems typically include the following characteristics:

➢ An integrated system that operates in real time (or next to real time), without relying on periodic updates.
➢ A common database, which supports all applications.
➢ A consistent look and feel throughout each module.
➢ Installation of the system without elaborate application/data integration by the Information Technology (IT) department.

Some other characteristics of ERP based on department of a company:

- **Finance/Accounting:** General ledger, payables, cash management, fixed assets, receivables, budgeting, consolidation

- **Human Resources:** Payroll, training, benefits, recruiting, diversity management

- **Manufacturing**: Engineering, bill of materials, work orders, scheduling, capacity, workflow management, quality control, cost management, manufacturing process, manufacturing projects, manufacturing flow, activity based costing, product lifecycle management

- **Supply Chain Management**: Order to cash, inventory, order entry, purchasing, product configuration, supply chain planning, supplier scheduling, inspection of goods, claim processing, commissions

- **Project Management**: Costing, billing, time and expense, performance units, activity management

- **Customer Relationship Management:**Sales and marketing, commissions, service, customer contact, call center support

- **Data Services:**Various "self–service" interfaces for customers, suppliers and/or employees

- **Access Control:**Management of user privileges for various processes

2.6 Features of ERP

Some of the major features of ERP and what ERP can do for the business system are as below:

- ERP facilitates company-wide Integrated Information System covering all functional areas like Manufacturing, Selling and distribution, Payables, Receivables, Inventory, Accounts, Human resources, Purchases etc.,
- ERP performs core corporate activities and increases customer service and thereby augmenting the Corporate Image.
- ERP bridges the information gap across the organization.
- ERP provides for complete integration of Systems not only across the departments in a company but also across the companies under the same management.
- ERP is the only solution for better Project Management.
- ERP allows automatic introduction of latest technologies like Electronic Fund Transfer (EFT), Electronic Data Interchange (EDI), Internet, Intranet, Video conferencing, E-Commerce etc.
- ERP eliminates the most of the business problems like Material shortages, Productivity enhancements, Customer service, Cash Management, Inventory problems, Quality problems, Prompt delivery etc.,
- ERP not only addresses the current requirements of the company but also provides the opportunity of continually improving and refining business processes.
- ERP provides business intelligence tools like Decision Support Systems (DSS), Executive Information System (EIS), Reporting, Data Mining and Early Warning Systems (Robots) for enabling people to make better decisions and thus improve their business processes.

2.7 Advantages of ERP Systems

- **Integrate Disparate Business Processes**
  Enterprise decision makers, chief information officers and IT directors evaluate and deploy proprietary ERP systems from market leaders such as Oracle, SAP AG, Autodesk, SAS and Microsoft Dynamics in order to integrate business processes and ever-increasing network systems, Web-based and business applications.

- **Operational Efficiency**
  One of the clear medium-term advantages of deploying ERP systems is operational efficiency in key process and functional areas such as manufacturing, production planning, purchasing, sales and marketing, and human resources.

- **Aid Decision Making**
  Top management and key executives get real-time insight into business activities and operations across locations, access to timely information and can adjust short-term strategic objectives.

- **Cost Reduction**

  ERP systems facilitate on-demand availability of enterprise business applications and quicker data/information flow between departments and offices helping employees to work faster, save valuable time and reduce operational costs.

- **Business Transformation**

  Investment in ERP systems involves long gestation periods, complex implementation challenges and project milestone issues. However, over time, all organizations look for the promise of dramatic business transformation leading to long-term agility, productivity and shareholder profitability.

2.8 Hidden Costs of ERP

Although different companies will find different land mines in the budgeting process, those who have implemented ERP packages agree that certain costs are more commonly overlooked or underestimated than others. Armed with insights from across the business, ERP pros vote the following areas as most likely to result in budget overrun.

- **Training**: Training is the near-unanimous choice of experienced ERP implementers as the most underestimated budget item. Training expenses are high because workers almost invariably have to learn a new set of processes, not just a new software interface. Worse, outside training companies may not be able to help user. They are focused on telling people how to use software, not on educating people about the particular ways one doing his business. Prepare to develop a curriculum of the company that identifies and explains the different business processes that will be affected by the ERP system.

- **Integration and Testing**:Testing the links between ERP packages and other corporate software links that have to be built on a case-by-case basis is another often-underestimated cost. A typical manufacturing company may have add-on applications from the major—e-commerce and supply chain—to the minor—sales tax computation and bar coding. All require integration links to ERP. If user can buy add-ons from the ERP vendor that is pre-integrated, it's better off. If user needs to build the links itself, expect things to get ugly. As with training, testing ERP integration has to be done from a process-oriented perspective. Veterans recommend that instead of plugging in dummy data and moving it from one application to the next, run a real purchase order through the system, from order entry through shipping and receipt of payment—the whole order-to-cash banana—preferably with the participation of the employees who will eventually do those jobs.

- **Customization**: Add-ons are only the beginning of the integration costs of ERP. Much more costly, and something to be avoided if at all possible, is actual customization of the core ERP software itself. This happens when the ERP software

can't handle one of the business processes and user decides to mess with the software to make it do what company wants. The customizations can affect every module of the ERP system because they are all so tightly linked together. Upgrading the ERP package—no walk in the park under the best of circumstances—becomes a nightmare because user have to do the customization all over again in the new version. Maybe it will work, maybe it won't. No matter what, the vendor will not be there to support user. User will have to hire extra staffers to do the customization work, and keep them on for good to maintain it.

- **Data Conversion**: It costs money to move corporate information, such as customer and supplier records, product design data and the like, from old systems to new ERP homes. Companies often deny their data is dirty until they actually have to move it to the new client/server setups that popular ERP packages require. Consequently, those companies are more likely to underestimate the cost of the move. But even clean data may demand some overhaul to match process modifications necessitated—or inspired—by the ERP implementation.

- **Data Analysis**: Often, the data from the ERP system must be combined with data from external systems for analysis purposes. Users with heavy analysis needs should include the cost of a data warehouse in the ERP budget—and they should expect to do quite a bit of work to make it run smoothly.

- **Consultants**:When users fail to plan for disengagement, consulting fees run wild. To avoid this, companies should identify objectives for which its consulting partners must aim when training internal staff. Include metrics in the consultants' contract; for example, a specific number of the user company's staff should be able to pass a project-management leadership test—similar to what Big Five consultants have to pass to lead an ERP engagement.

- **Replacing the best and brightest**:It is accepted wisdom that ERP success depends on staffing the project with the best and brightest from the business and IS divisions. The software is too complex and the business changes too dramatic to trust the project to just anyone. The bad news is a company must be prepared to replace many of those people when the project is over. Though the ERP market is not as hot as it once was, consultancies and other companies that have lost their best people will be hounding with higher salaries and bonus offers than user can afford—or that HR policies permit. Huddle with HR early on to develop a retention bonus program and create new salary strata for ERP veterans. If user let them go, user will wind up hiring them—or someone like them—back as consultants for twice what user paid them in salaries.

- **Implementation teams can never stop:** The implementers are too valuable. Because they have worked intimately with ERP, they know more about the sales process than

the salespeople and more about the manufacturing process than the manufacturing people. Companies can't afford to send their project people back into the business because there's so much to do after the ERP software is installed. Just writing reports to pull information out of the new ERP system will keep the project team busy for a year at least. And it is in analysis—and, one hopes, insight—that companies make their money back on an ERP implementation. Unfortunately, few departments plan for the frenzy of post-ERP installation activity, and fewer still build it into their budgets when they start their ERP projects. Many are forced to beg for more money and staff immediately after the go-live date, long before the ERP project has demonstrated any benefit.

- **Waiting for ROI**: One of the most misleading legacies of traditional software project management is that the company expects to gain value from the application as soon as it is installed, while the project team expects a break and maybe a pat on the back. Neither expectation applies to ERP. Most of the systems don't reveal their value until after companies have had them running for some time and can concentrate on making improvements in the business processes that are affected by the system. And the project team is not going to be rewarded until their efforts pay off.

- **Post-ERP Depression**: ERP systems often wreak cause havoc in the companies that install them. The most common reason for the performance problems is that everything looks and works differently from the way it did before. When people can't do their jobs in the familiar way and haven't yet mastered the new way, they panic, and the business goes into spasms.

2.9 General Concepts of ERP System in Firms within the Engineering & Construction (E&C) Industry

The E&C industry is fragmented, complex and competitive, consisting of a vast diversity of players from owners/developers, architects, engineers, general contractors, to specialized trade contractors, subcontractors, and material and equipment suppliers. Figure 2 shows the typical business activities in engineering and construction. Due to segmented phases and various participants, management of engineering and construction is inclined to be problematic.
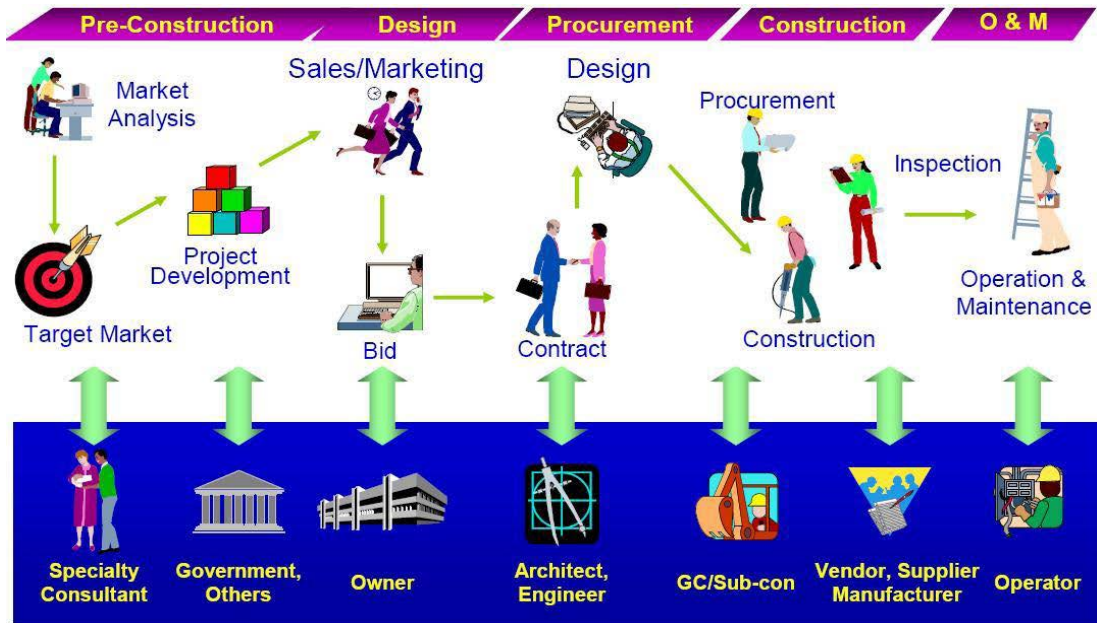
Figure 2.2: Typical Business Processes in Engineering and Construction

The general concept of ERP system structure and major functions for engineering and construction firms is illustrated in Figure 2. Although the business processes of E&C companies differ due to a variety of factors such as organizational structure, sub-market orientation, business culture and so on, there are many similarities in the business functions because of the project-centric production in engineering design and construction. The major application areas of ERP systems for engineering and construction are Financial Accounting and Project Management. These two core functions are tightly connected with each other, and all the other functions support them to streamline the whole business processes. Other functional modules which are not shown in the figure can also be included in a company 's ERP system depending on its specific needs.
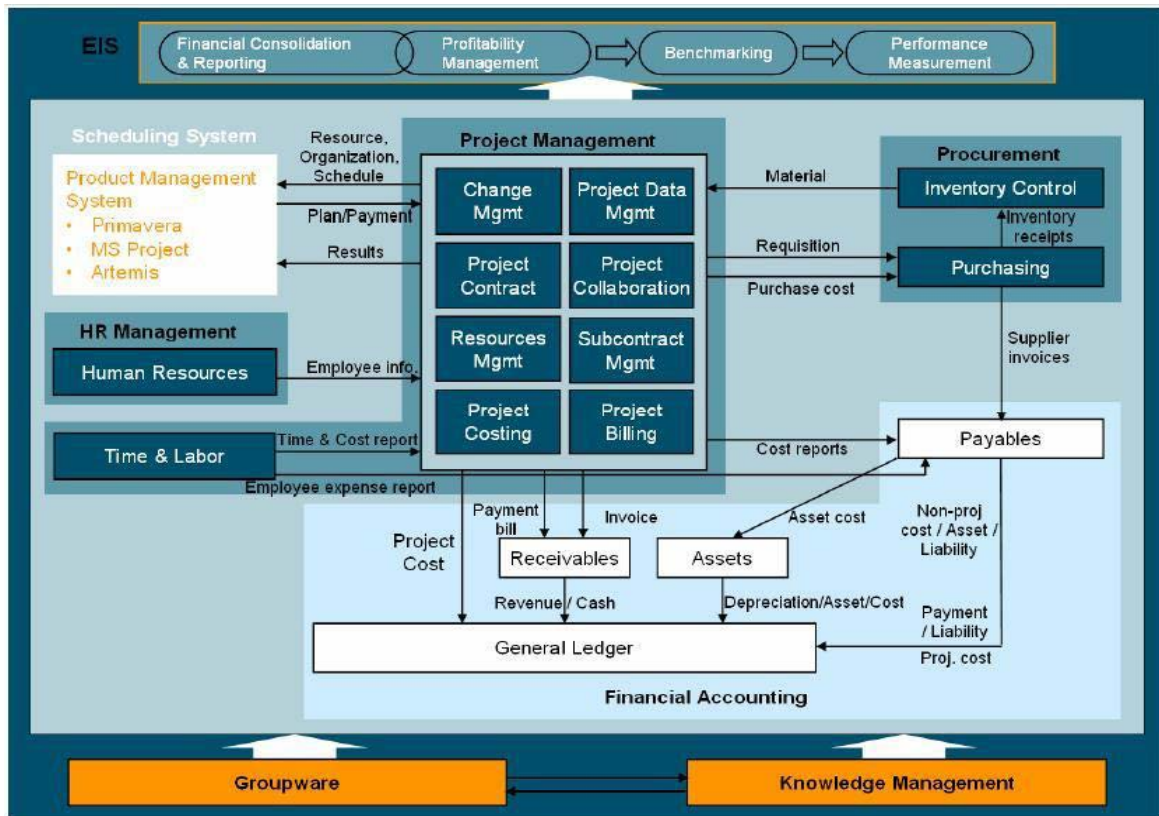
Figure 2.3: General Concepts of ERP Systems in Engineering & Construction

Due to the unique nature of the E&C industry, some research has been conducted to identify the essential components of an ERP system for use in this industry in order to achieve successful implementation. General Concepts suggested with several features for a successful ERP system for use in construction industry, including project-oriented, integrated, parallel and distributed, open and expandable, scalable, remotely accessible, transparent, and reliable and robust.

CHAPTER THREE

BANGLA TRAC LIMITED

3.1 Background of Bangla Trac Ltd.

The Bangla Trac Ltd. incorporated as a private Limited company under the Companies Act. 1994. Bangla Trac Limited (concluding business under the name 'Bangla CAT') was appointed the dealership for Caterpillar engines and equipment's in the People's Republic of Bangladesh on the 11th of October 2004.

Bangla CAT's management brings with it over thirty years of experience in marketing Caterpillar products in Bangladesh. Bangla CAT also brings with it the commitment to improve the already high level of service and coverage that Caterpillar customers receive. With a corporate Office located in the heart of Dhaka in House# 68 (Old 45), Road#11, Block# H, BananiC/A and a Service Centre in the highly industrialized region ofVulta on the easily accessible Dhaka-Narshingdi highway, and other one is situated in the highly industrialized region of Ashulia on the easily accessible Dhaka-Ashulia highway. The branch office is in Chittagong and the site office is in Sylhet. Bangla CAT provides unparalleled nationwide customer access. Starting with an impressive fleet of dedicated servicing vehicles, Bangla CAT also aims to expand its facilities to a fleet of servicing vehicles capable of providing round the clock support within the industrial sector.

3.2 Sister Concern of Bangla CAT

There are several sister concern under the name of Bangla Trac Limited. These sister concern are-

1.Bangla CAT

2. Acorn Infrastructure Ltd.

3.Bangla Trac Communications Limited

4.Bangla Trac Engineering Limited

5.Acorn Limited

6.Bangla TracMiaki Green Power Limited

7.Bangla Trac Media Limited

8.Bangla Trac Resources Limited

9. Bangla Trac Oil & Gas Limited

3.3 Motto of Bangla CAT

"YOUR INDUSTRY OUR ENERGY"

3.4 Vision of Bangla CAT

Make progress possible through excellence in technology, integrity and best in class customer service.

3.5 Mission of Bangla CAT

- To be the leader in providing the best value in machines, engines and support services for customers dedicated to building infrastructure, developing and transporting its resources. *We provide the best value to customers.*

- Our people will increase shareholder value by aggressively pursuing growth and profit opportunities that leverage our engineering, manufacturing, distribution, information management and financial services expertise. *We grow profitably.*

- We will provide our workforce with an environment that stimulates diversity, innovation, teamwork, continuous learning and improvement and rewards individual performance. *We develop and reward people.*

- We are dedicated to improving the quality of life while sustaining the quality of our earth. *We encourage social responsibility.*

3.6 Values of Bangla CAT

- **Customer Service First:**
  First priority of Bangla CAT is to serve the customer first. Today's volatile business environment organizations recognize that customer service is the key differentiator that makes their products and services rise above the competitor. So Bangla CAT is always ready to use their resources quickly and effectively to solve customer's problem by engaged for 24x7 services.

- **Teamwork:**
  Teamwork is shown in every department of Bangla CAT. Work together as a team with all stakeholders to secure the organization's future.

- **Integrity:**
  Bangla CAT employees are uncompromisingly honest, trustworthy and professional in all their dealings internally & externally.

- **Innovation:**
  Bangla CAT executive board always encourages team or individual innovation. So, encourage innovation, continuous, improvement and learning throughout the organization, make it different to others.

- **Quality:**
  In every aspect Bangla CAT believe in quality. Bangla CAT became an idol in engineering industry by ensuring top class quality.

- **Leadership Through Excellence:**
  Maintain leadership in the market through continuous excellence.

- **Ownership Mentality:**
  Deal with every task with a feeling a long term ownership.

3.7 Business Portfolio

Bangla CAT provides different types of products and service. Some of these areas-

- Gas and Diesel & HFO generator
- Marine engines
- New and used construction & material handling machineries
- Power rentals
- Construction machineries rentals
- Unparalleled product support
- CAT engine oil
- Highly equipped services engineers.

CHAPTER FOUR

ERP PROJECT IMPLEMENTATION

4.1 Project Scope

Under this section of the document it is described the scope of the project which the users will easily identify and understand the boundaries of the project. This will define that how IFS will cater the Bangla CAT business process through the system and identified constraints if any. Under IFS ERP system for Bangla CAT will automate its business process and the modules that are used to automate the business process in IFS are as follows.

IFS Distribution   IFS Projects

IFS Sales & Service   IFS Maintenance

IFS Human Resource   IFS Financial

4.2 Customer Locations Scope

Bangla CAT has 4 different entities excluding the head office, located in different areas in Bangladesh.

1. **Corporate Office:**

   House#68 (Old 45), Road# 11, Block# H, Banani C/A, Dhaka – 1212.

2. **Chittagong Office:**

   100 Agrabad C/A, Chittagong.

3. **Ashulia Facility:**

   Narsinghapur, Ashulia Highway, Savar, Dhaka

4. **Vulta Facility:**

   Aukhab, Vulta, Gausia, Rupganj, Narayanganj.

4.3 Project Services Scope

4.3.1 Industrial and Financial Systems (IFS)

It is identified that the project services of the Bangla CAT project will be done by both ICE Technologies & IFS. Till the successful completion (GO live) of the project, ICE will drive the project and take guidance from IFS, whereas when the project is successfully completed (After GO live) first line support for the Bangla CAT project will be provided by ICE

technologies and if there any issues related to customization or modification, ICE will escalate to IFS and IFS will assess the priority of the issue and provide solutions.

4.3.2 ICE Technologies

ICE technologies being the partner of IFS for the project "Bangla CAT" will act as the direct facilitator in Bangladesh for any project related activities for the customer. ICE technologies will be the first line support to the customer when the successful completion (GO live) of the project and any circumstances where customer feels that the ICE technologies will be the convenient access for them regarding any project related queries. It is identified that the ICE technologies have the relevant expertise on the IFS system through participating for training courses which IFS will be conducting and support or trains the end users of the customer with the relevant functionalities of the IFS system. ICE technologies project manager will be the direct access for the customer regarding any project decisions.

4.3.3 Bangla CAT

Bangla CAT always support the progress of the project and any support that the implementation team require for the successful completion of the project. It is a must that the Bangla CAT has a skilled Core team to drive the project from their side and the core team and the users must absorb the maximum through the training which ICE technologies will be conducting throughout the project at different stages. Bangla CAT has to make sure that any "resistance to change" of the user level will be handled positively for the betterment to the project.

4.4 Project Deliverables Scope

ICE has to deliver the following functionalities as deliverables to map the Bangla CAT business process to IFS ERP system.

Figure 4.1: ERP Project Scope

4.5 Decision Analysis and Resolution

DAR system will be followed for any kind of situation where a critical decision needs to be taken and to ensure that a formal and structured approached is used in analyzing and making decisions among identified alternatives. Any kind of Financial, Managerial or Technical issue will be resolved using DAR. Member of the Steering committee along with selected Core team member and SME (Subject matter expert) will be the participants for this session.

4.6 Training Plan

ICE will provide four level of training for Core Team member, end user and super user. IFS Core product training – this training is only for Core team members.

Mapped product training - this training is only for Core team members. Establish solution training - this training is for End user.

Trainee of Trainers training - this training is for Super user.

Also ICE will provide hands on training after Go live for next two months

End of Project Evaluation

The following steps will be followed at the end of the project:

- Customer feedback is accomplished by the Account Manager.
- PM will organize a project closer meeting and the factors should be considered:
    - Evaluation of Project performance
    - Total effort and customer satisfaction;
    - Positive and negative aspect of the project
    - Project asset and resource status
- The Project closer note will be prepared for project closing;

4.6.1 Planning

Initial Planning will be carried out by the Project Manager and reviewed by ICE & IFS Project director.

- During Project Planning, project schedule will be reconfirming by the stakeholders of the project & Steering committee.
- During project execution, plan needs to be changed and PM will perform this with the help of Project director and relevant stakeholders.
- Plan will be updated by PM and PM will take necessary actions for keeping track record.
- Project Account Manager will communicate for any kind of Change Request.

4.6.2 Monitoring

- During project execution phase, every project monitoring parameter such as Effort, Cost, and Schedule will be monitored and status being reported through to Steering Committee meeting.

- Project identified Risks will be monitored and in case of new Risk arise, it should be report to the Core team member and Steering Committee (if needed).

- For Project Monitoring purpose, Issue list have to maintain throughout project life cycle.

- Stakeholder Involvement and commitment will be monitored.

- Project team meeting will be held at once in a month. If necessary; daily follow up will be carried out by PM.

- During the project execution phase, if project scope has been changed by the client, then new scope should be reviewed and approved by Steering Committee.

- During the project execution phase, if customer introduce or change any requirement and that is effect the project effort, cost and schedule; the new requirement should be reviewed and approved by Steering Committee.

- For updating any plan, Steering Committee will review and approved that document.

- Configuration management will maintain throughout the project execution phase.

- MS Project will be used by PM for tracking the project status.

- Critical Path of the PS will be monitored.

4.6.3 Control

- Decision and corrective actions will be taken by PM during the project team meeting as well as when PM has identified any issue related to the project.

Listed below are the project area wise responsibilities:

	BanglaCAT	ICE/IFS
ProjectMana gement	- Creationandmaintenanceo ftheoverallProjectPlanagr eedinProjectManagement Team - AllocateandplanBC ATresources - ManageBCATresour cesDefinerolesandres ponsibilitiesinthetea m	- LeadtheProjectManagementTeam CreationandmaintenanceoftheoverallProjectPlanagreedinProjectManagementTeam - Allocateandplanresources - Manage resources - Controlprojectagainstprojectgoalsandobjectives - Definerolesandresponsibilitiesin theteam
	- Control project against project goals and objectives - Key contact person to ICE Project Manager - Coordinates booking of training, workshop, conference room pilot-centers, dates & times and any other logistic support	- Key contact person to the Customer - Completes the project within the contracted time and resource frame - Creation of Status Reports agreed in Project Management Team
Business Process	- Process modeling of As Is/To Be business processes - Definition and documentation of business process scenarios	Assist and guide Bangla CAT in preparation of Business Process

Core team	• Support the implementation team acting as an intermediary to the end user and the implementation team. • Support the end users with the system where required	
Mapping Business Processes towards IFS Applications	• Definition of business process requirements of identified gaps • Verification and approval of suggested gap solution • Participate in mapping workshops	• Mirroring of the business processes in the Business Modeler • Lead the work of mapping the business processes towards the IFS Applications using business process scenarios
Training	• Define and document work instructions • Train end users using the work instructions	• Training of process owners / key users • Continuous advice and support of how to use IFS Applications to process owners / key users according to agreement
Support		• The support to the Customer will be from ICE. With the successful completion of the project (After Go-Live), ICE Technologies will provide the first line support to the customer.

Data	• Define and document data ownership • Manual conversion and entering to Test- and Production environment • Verification and approval of automatic converted data	• Automatic conversion of agreed data at one instance to Test- and at one instance to Production environment
IFS Applicatios (Software)		• Installation of IFS Applications to Test- and Production environment according to the agreement • Provide corrections and patches according to the support & maintenance agreement
Database	• Administrate the Test- and Production database • Safety backup and recovery	• Installation of Oracle including setup of Test- and Production instance
Hardware	• Platform for Test- and Production environment	
Network & Communications	• Infrastructure for Test- and Production environment • Allow access to Test- and Production environment from the IFS community	

Table 4.1: Project Responsibility

4.7 Steering Committee

Steering Committee consist of the project sponsor as well as Senior Management members from Bangla CAT and ICE & IFS. The Steering Committee will meet periodically, monthly to review progress and make key decisions pertaining to the project. On a more regular basis, the Project Managers will report to the Steering Committee on the progress of the project, and refer to the steering committee for any decisions that may be necessary. Project Managers will participate as members of the Steering Committee.

4.7.1 ICE Project Manager

The ICE Project Manager's role is to complement BCAT Project Manager. Services provided include:

- Ensuring timely completion of tasks and deliverables.
- Plan and co-ordinates the activities of the project.
- Ensure that project resources are appropriately utilized.
- Provide Quality assurance mechanism for all project activities and deliverables.
- Prepare and deliver regular status reports from project perspective.
- Acts as liaison to the other project divisions such as Training, Support, Sales and Marketing.
- Updates the Project Plan and report on the overall status of the project.

4.7.2 Bangla CAT Project Manager

The Bangla CAT Project Manager together with the ICE Project Manager will be jointly responsible for the project as follows:

- Will be responsible for the overall progress of the project.
- Responsible for tracking the project, making decisions where applicable or referring them to the Steering Committee for a decision.
- Communicate the project status to the Steering Committee and to the rest of the Management Team in Bangla CAT.
- To ensure buy in to the project from the staff and Management.
- Responsible for resource allocation.
- During the Implementation Strategy Phase, together with the IFS Project Manager they will be responsible for defining the key deliverables of the project, which will contain a project plan and all other parameters governing the project.
- He will be the main point of contact from Bangla CAT with the project implementation team.

4.7.3 ICE Technologies

ICE Technologies and Services Limited is the Implementer and the first line support for Bangla CAT. All the project related queries of Bangla CAT will be handled by ICE.

4.8 User Core Team

Each User Team should consist of a Team Leader and Team Members. It is the best practice that Bangla CAT should organize their users into its respective business functions such as finance distribution etc. Some of the team members may change from phase to phase but it is recommended that the Team Leader be the same person throughout the project. The role of the core teams would be assisting the implementation team with the relevant information's and perform a leading role in the project with proper training on the system functionalities. This will enable the core teams to facilitate the end users with the correct mapped process.

4.8.1 User Team Leader

The User Team Leader will be responsible for the following:

- Making decisions and defining requirements

- Reviewing and verifying the deliverables of the project.

- Co-ordinate the activities of the members

- Ensure that resources are available for the project at the identified time so that the project time frame is not affected

4.8.2 User Team Members

In each team there should be one to more team members depending on the scope of the specific project task. The roles and responsibilities are as follows:

- Identifying and compiling reports required.

- Gathering historical data, entering and verification of data converted.

- Assisting the Team Leader in requirement definition.

- Prepare business system test data

- Conducting business system testing and verify results.

- Preparing User documentation.

- Conducting User Training.

4.8.3 IFS Application Consultants

IFS Application Consultants will be responsible for various activities in the implementation as follows:

- Identifying requirements

- Mapping requirements to the package.

- Identifying and proposing solutions for conversions, and interfaces to be implemented.

- Determine conversion and interface approach

- Problem resolution during implementation.

4.8.4 Technical Team

The technical team should consist of MIS Personnel from Bangla CAT. However, if the team is new and assistance is required in building up the skill of the team, some of the roles could be filled by resources from IFS during the implementation stage. The identified roles required for the project must include a Technical Team leader and a Database Administrator who has the role of System Administrator of IFS Applications.

In all phases of implementation, the main objective is to achieve a rapid implementation and therefore customization will be kept to a minimum as defined in the Project Assumptions Section.

4.8.5 Technical Team Leader

Assume that the ownership of the system during installation and implementation is also with the technical team leader.

- Responsible for the technical aspects of the IFS Application implementation

- Responsible for coordinating the interfaces between the various systems.

- Co-ordinate the activities of the team members.

- Responsible for the configuration of the hardware and softwarerequired to support the applications

4.8.6 Database Administrator

Bangla CAT should have a database administrator as part of the team.

- Responsible for all housekeeping activities for the Oracle Database.

- Monitoring the performance and tuning the database

- Ownership of the database

- Assume the role of the System administrator for IFS Applications

4.8.7 ICE Support Manager

The ICE Support manager will be the point of contact for the Project Team should problems and/or issues arise concerning software bugs, product versions, product compatibility or other technical issues. The support manager will be responsible for:

- Resolving Technical issues.

- Ensuring that bugs and patches etc. is administrated correctly.

- Liaison with IFS Research and Development should this become necessary.

- Providing general technical advice on Sizing, Configuration and Tuning.

4.9 Project Infrastructure

In total 4 different environments will be created for the Bangla CAT project, which will be described in the following paragraphs:

4.9.1 Training Environment (RACE)

This environment is stored on the temporarily training server of Bangla CAT. Within this environment the IFS consultants will train the BCAT key-users by using IFS training.

4.9.2 Test Environment (TEST)

This environment is stored on a server at Bangla CAT. ICE consultants in cooperation with BCAT key-users will test the set up and do adjustments within this environment

4.9.3 Production Environment (PROD)

This environment is stored on the main server at Bangla CAT. Within this environment the production in the Be-Live phase will take place. All live data will be in this environment and the live transactions will be done in this environment.

4.10 Dial-up Link

It is necessary that there exists a direct link between Bangla CAT and ICE when the PROD environment is set up. This will enable ICE consultants and software engineers to log-in into ICE PROD environment for issue handling. BCAT should set up the necessary infrastructure at Bangla CAT.

Most Importantly Bangla CAT has to establish a data communication link between all its subsidiaries as ICE is an online system and they should establish this link with a proper network well prior to the implementation of the system

4.11 ERP Software Overview

4.11.1 ERP System for Bangla CAT
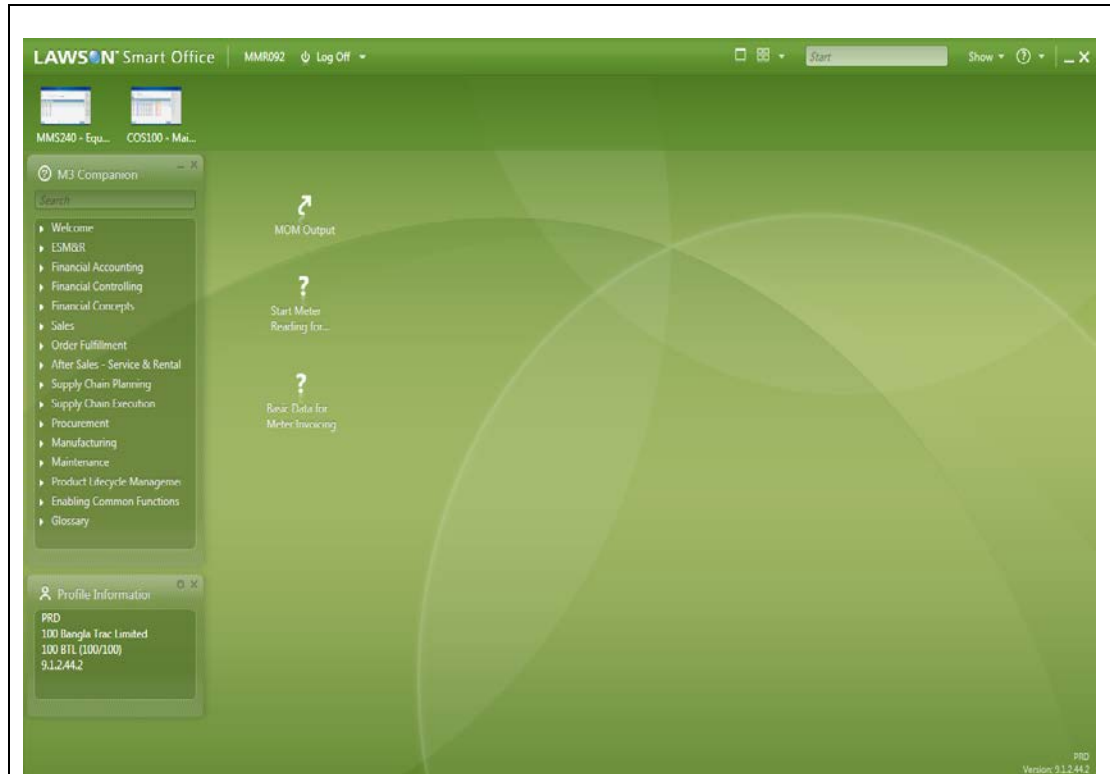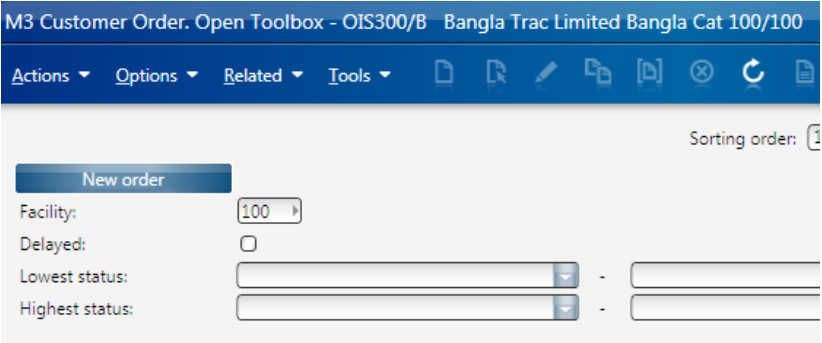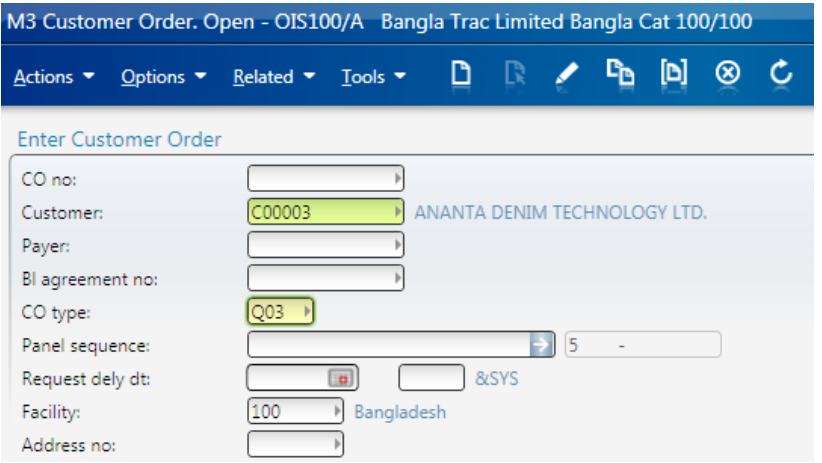
Figure 4.2: Main Window of ERP System

4.11.2 ERP Total Process in Bangla CAT SCM Division

	Quotation Creation
At the Lawson Smart Enter OIS300 in the box and press ENTER.	
At the customer order toolbox, click on New Order.	
Enter the customer code and order type. Ensure that the order type you select is for quotations. Press ENTER.	

Amend any information (Warehouse, Order Date, and Delivery Date) necessary then press ENTER to continue.	
Amend any information (Payment Terms, Delivery Method) necessary then press ENTER to continue.	

Amend any information (Sales Person) necessary then press ENTER to continue.	
Amend any information (Price List, Currency Type) necessary then press ENTER to continue.	

Enter the item code you want to provide a quotation for and press ENTER.	
At this point, you can input either a percentage OR an amount discount.	

Continue adding more items and press F3 when done.	M3 Customer Order. Open Line - OIS101/B1 Bangla Trac Limited Bangla Cat 100/100 Actions ▾ Options ▾ Related ▾ Tools ▾ Create Select Change Copy Display Delete Refresh Zoom Sorting order: 1-Order line no View: 1.PRICE-STD W WITH IT Panel Header Customer: KENNETH KENNETH CO no: 0002000157 CO type: A04 QUOTATION Lowest status: 05-Quotation Customer stop: 0-Not blocked Highest status: 05-Quotation CO stop: 0-No stop Last page Order Lines | Line	Sf	Item number	Name	Order	U/M	Sales prce	Disc	Net price	Line amt	Cfdldt	D
---	---	---	---	---	---	---	---	---	---	---	---
1		0935369	ELEMENT	10	PC	77.59		77.59	775.90	130611	0	
Enter the valid to date for the quotation and other information where necessary. Press ENTER to continue.	M3 Sales Quotation. Open Information - QPS115/E Bangla Trac Limited Bangla Cat 100/100 Actions ▾ Options ▾ Related ▾ Tools ▾ Create Select Change Copy Display Delete Refresh Zoom Panel Header CO no: 0002000157 Customer: KENNETH KENNETH Details Ref object: not used Status: 20-Definite quotation Quot reason: not used Valid to: 300611 Dely time days: Flw-up date 1: 120611 Flw-up activ 1: Blank Flw-up date 2: 120611 Flw-up activ 2: Blank Ordering method: 0-Telephone User-def fld 1: User-def fld 2: User-def fld 3: User-def fld 4: User-def fld 5: User-def fld 6:
The quotation is now created. Take note of the quotation number.	M3 Customer Order. Open - OIS100/A Bangla Trac Limited Bangla Cat 100/100 Actions ▾ Options ▾ Related ▾ Tools ▾ Create Select Change Copy Display Delete Refresh Enter Customer Order CO no: 0002000157 Customer: KENNETH KENNETH Payer: BI agreement no: CO type: A04 Panel sequence: EFGH58 Request dely dt: &SYS Facility: Address no:

Service Request Work Flow
 	
Enter fields:
 	
Customer: SERCUST01
 	
Agreement: G3516
 	
Product: G3516
 	
Lot number: ZBA00680
 	
Order qty: 1
 	
MCO line type: 0－Normal
 	
Service: TROUBLESHOOT
	M3 Maint CO. Quick Entry - COS130/A Bangla Trac Group Bangla Cat 100/100
	
	Actions ▾ Options ▾ Related ▾ Tools ▾
	
	Enter Maintenance Customer Order
	
	CO no: Cust order no:
	Customer: SERCUST01 Agreement: G3516
	
	          Facility: 100
	Product: G3516 Order type:
	Lot number: ZBA00680 Trans reason:
	          Request dely dt:
	Order qty: 1
	MCO line type: 0-Normal
	Service: 002 TROUBLESHOOT
	
	Text: Troubleshoot
	
	User-Defined Fields
	Overtime Y/N:
	WO UD2 MOS983..: 0,00
	WO UD3 MOS983..:
	WO UD4 MOS983..:
	WO UD5 MOS983..:
	
	X Close Select ← Next →

A Maintenance Customer Order 0060000012 has been created with line 00001	
You can see a new Maintenance Customer Order 0060000012 is displayed	

Check about and change any information of MCO head if possible

Notice the High status and Low status

A line of MCO is displayed	**M3 Maint CO. Open Line - COS101/B1 Bangla Trac Group Bangla Cat 100/100** Actions ▾ Options ▾ Related ▾ Tools ▾ Sorting order: 1-Order line no **Maintenance Customer Order** CO no: 0060000012 Customer: SERCUST01 Service Customer T01 **Order Lines** Line Stp Service Product Serial/Lot # Qty U/M Status Srv Price Mthd Ln Type Claim 1 002 TROUBLESHOOT G3516 ZBA00680 1 EA Approved Fixed Price Labor Normal Ltp Line Stp Service Product Serial/Lot # Order qty 0 [ ] [ ] [ ] G3516 ZBA00680 [ ] ✕ Close Browse Details Text Maint CO. Check Preliminary Invoice Spec (... ← Next →

Check about and change any information of MCO line if possible
 	
Notice the Price agmt cur is
 	
16000 BDT
	M3 Maint CO. Open Line - COS101/E Bangla Trac Group Bangla Cat 100/100
	Actions ▾ Options ▾ Related ▾ Tools ▾
	Maintenance Customer Order
	CO no: 0060000012 1
	Customer: SERCUST01 Service Customer T01
	Details
	Product: G3516 Service product: G3516
	Serial/Lot #: ZBA00680 Complaint (EC1):
	Structure type: 002 Cause (EC2): Not used
	Service: TROUBLESHOOT Correction (EC3):
	Order qty: 1 EA Trans reason: Normal Orderlin
	VAT code: 1 GST Serv price mtd: 5-Fixed price lab
	                                   MCO line type: 0-Normal
	Price agmt cur: 16000,00 BDT Highest status: 10-Approved order
	Max repair cost: Total amt agr: 16000,00
	Max mtrl/trans: 0,00 BDT
	                                   Warehouse: 100
	Claim warranty: 0-No Abnormal demand: ☐
	Tax exempt cont:
	Industry app:
	Warranty type:
	
	✕ Close Browse Details Text Maint CO. Check Preliminary Invoice Spec (... ← Next →
	05-03-11 05-03-11 LAWSON05

Back to MCO line	

Create a Work Request based on MCO line	
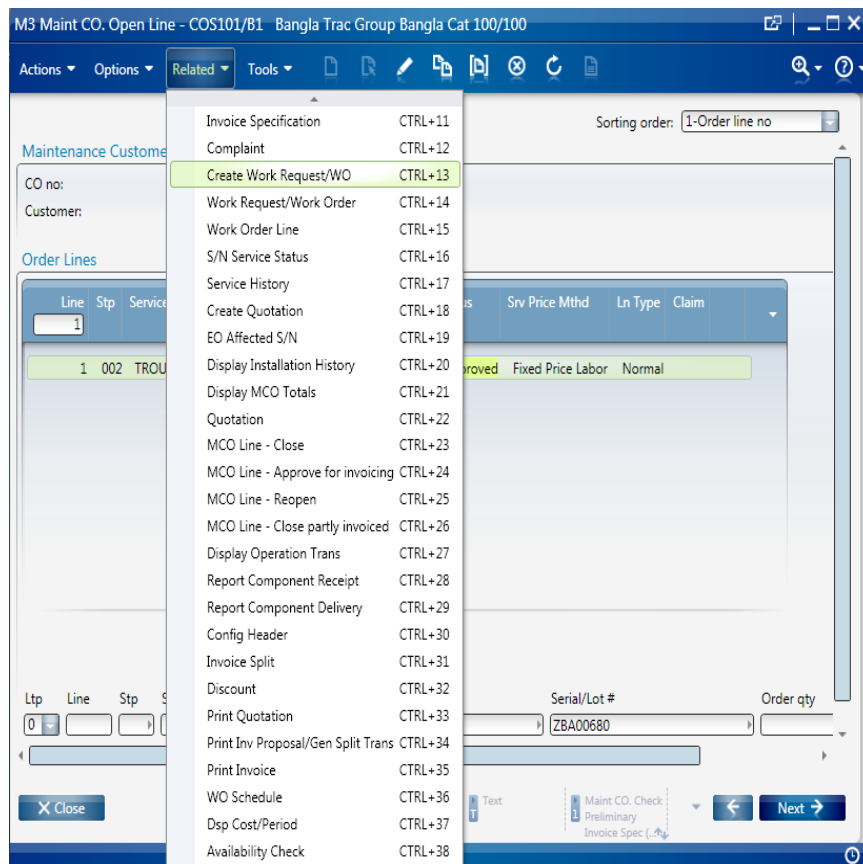
A message "Work request has been created for G3516 S/N ZBA00680" appears	
View the Work Request	
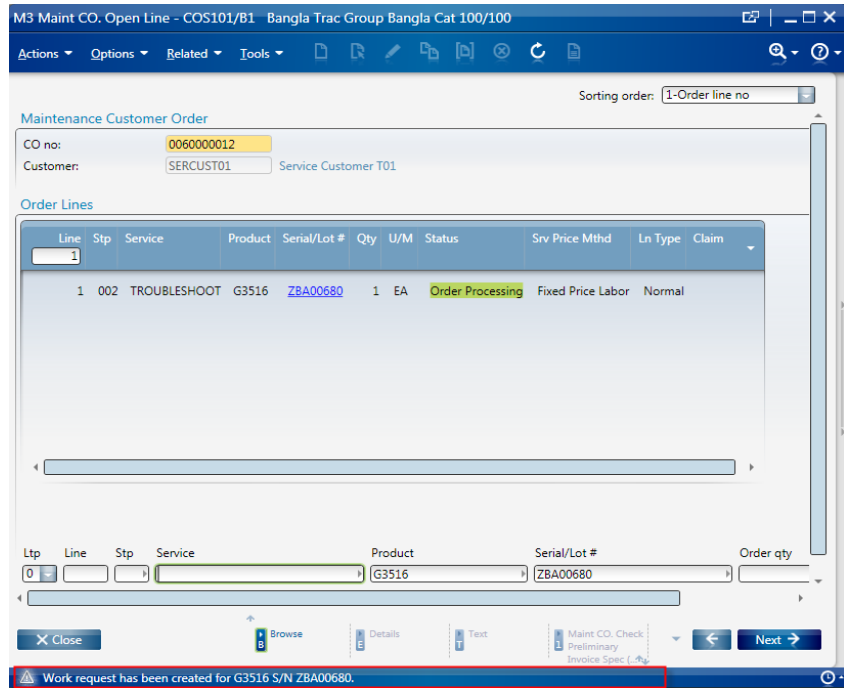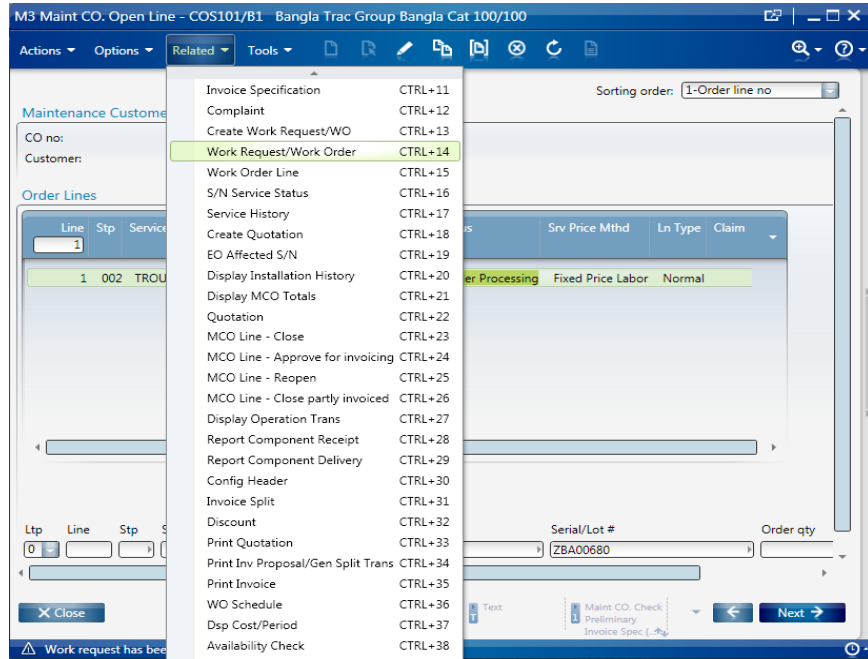
The Work Request is displayed Service Work Request has been Created	
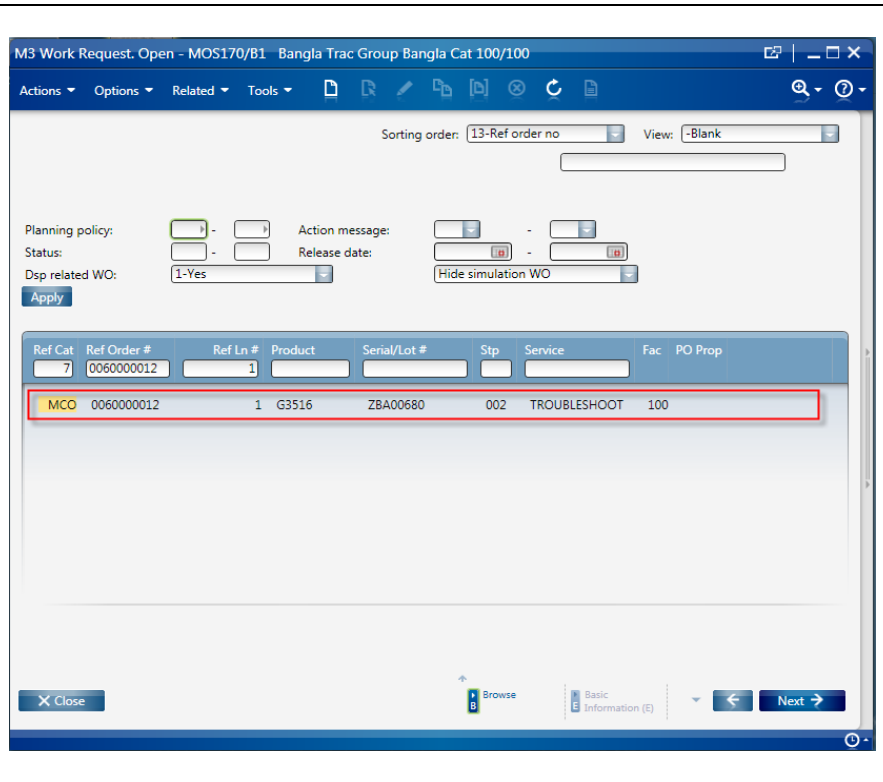
Figure 4.3: ERP Total Process in Bangla CAT SCM Division

4.11.3 Bangla CAT Sales Tool for Customer Database

The M3 Sales & Marketing Automation is a complete sales system for people who have high demands on information management - not just in the business phase but also in the project and realization phases.

Sales department will be able to organize and synchronize all its work and become more efficient. It will be able to manage the whole process from receiving a lead to the creation of an order. Implementing the same system for everyone at the company who is involved with customers ensures that one has a single, comprehensive view of all customer contacts. This helps to build up a strong corporate memory for each customer relationship.

Since the cost of sales is high for many companies, automating sales department processes can result in big cost savings as well as increasing revenue. M3 Sales Automation allows to automate every step in sales process from the moment it receive a lead. It's there to support throughout the opportunity management phase all the way through the quotation process to order entry.

All components of M3 Sales Automation are seamlessly integrated with the rest of the M3 Sales & Marketing Automation suite of applications, making it easy to follow the progress of an order from beginning to end. It can also track sales statistics per customer and salesperson.

Each salesperson can organize his or her scheduled day-to-day activities in a to-do list. He or she can view the to-do list according to different time scales such as "today," "this week" or "this month." It's easy for the salesperson to see these scheduled activities directly in his/her calendar since the M3 Sales Automation is integrated with e-mail and calendar systems. It's also easy to send e-mails directly from the system and have them stored for future reference.
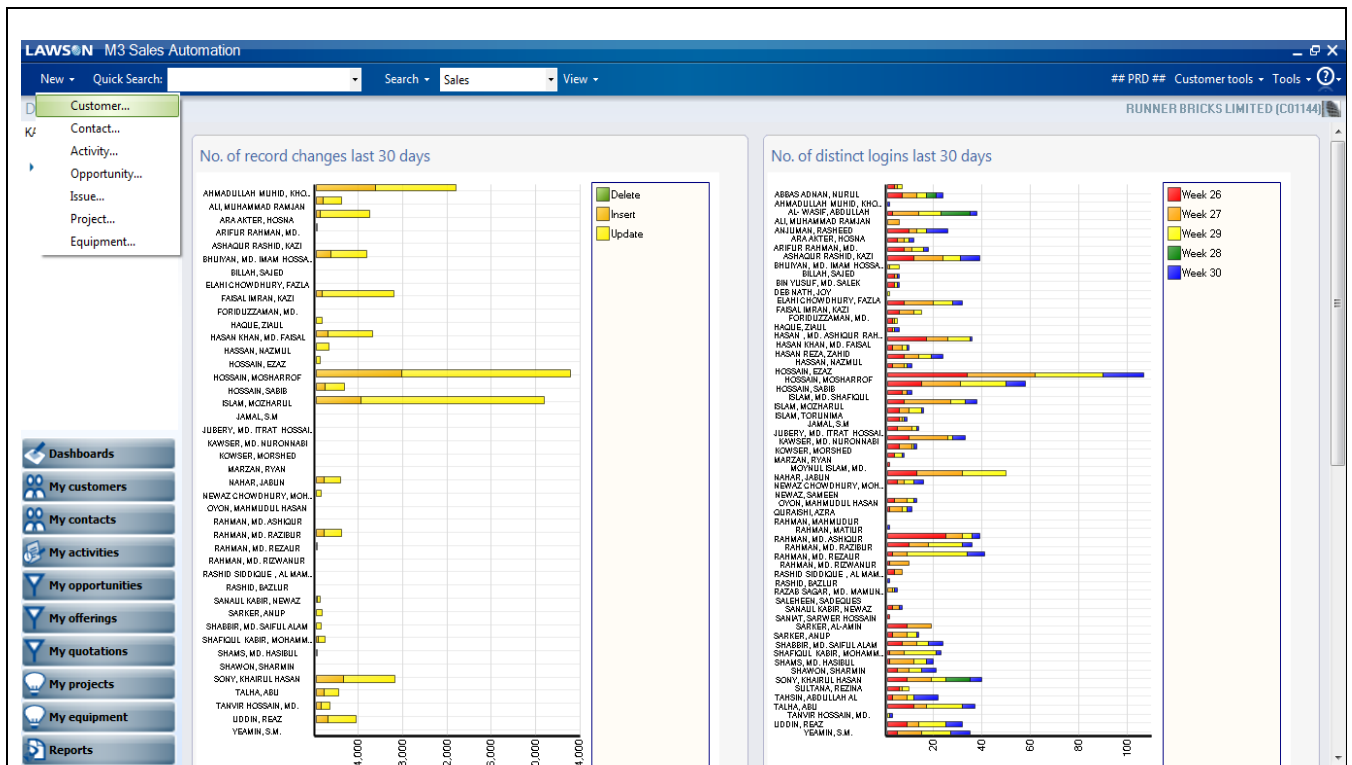
Figure 4.4: Main Window of M3 Sales Automation

CHAPTER FIVE

ANALYSIS AND FINDINGS

5.1 Changes due to ERP Implementation

The most significant intangible benefits related to strategic effectiveness include internal integration, improved information and processes, and improved customer service, while tangible benefits related to operational efficiency include cost efficiencies in inventory, personnel, procurement and the time needed to close books, as well as improvements in productivity, cash/order management, and overall profitability.

Organizations trying to understanding the value of the ERP investment should view it through two lenses: a fine-grained level analysis, and the intermediate benefits involved. Such intermediate benefits may include (1) higher quality data for decision making; (2) efficiency gains in business processes; and, (3) better coordination among different units of the firm. Further, the ERP systems benefits cover the intermediate factors and extend the two dimensions (operation and strategy) to four dimensions, including the operational, managerial, strategic, IT infrastructure and organizational benefits. Operational efficiency relates to factors such as cost reduction, increased inventory turns; managerial benefits refers to factors such as improved decision making and planning and better resource management; Strategic effectiveness refers to factors such as improved managerial decision making; IT infra-structure benefits related to IT flexibility and capability, and Organizational benefits refers to factors such as employee learning, and empowering workers.

Table5.1 shows the dimensions and sub dimensions of ERP systems benefits:

ERP benefits	Measures	Link With Business Benefit
Operational benefits	Tangible with measurable with figures	Direct link with end result in operation
Managerial benefits	Intangible	Reflect through the use of information and consequent benefits
Strategic benefits	Intangible	Direct link with business expansion and with product and marketing cooperation
Organizational benefits	Intangible	Indirectly driving positive outcomes in various parts of the business.

Table 5.1: Changes due to ERP Implementation

5.2 Operational Changes due to ERP Implementation
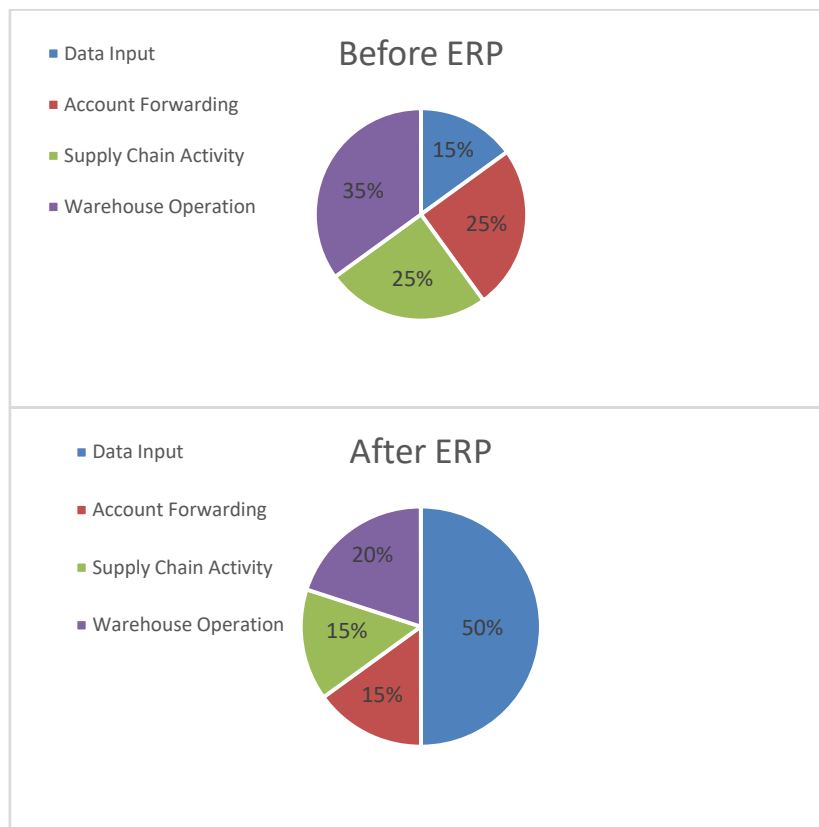
Figure 5.1: Operational Changes in terms of time due to ERP Implementation

Figure 1 indicates operational changes due to ERP implementation in Bangla CAT. This data has been collected from Bangla CAT's ERP division. It can be seen from the above figure that by increasing the data input only account forwarding, supply chain activity & warehouse operation have been decreased dramatically. For instance, time takes for a single part delivery to a customer from Bangla Trac warehouse took 40 minutes before ERPimplementation &after ERP implementation it reduces to 6 minutes. It helps a lot for the constant improvement in customer service and at the same time reduction in cycle time for a productdelivery.

5.3Strategic Benefits

Below figure shows the strategic Changes due to ERP implementation. Before ERP implementation top management had less time to planning for organizational development it consumes almost 20% time to plan and now this is 60% due to less time in transaction processing & get report from finance and other supporting department.
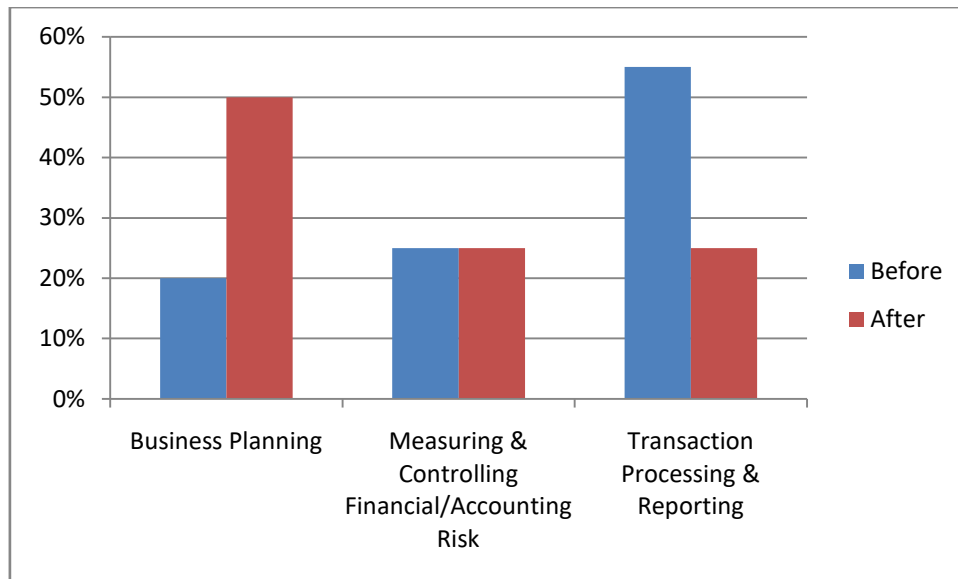
Figure 5.2: Strategic Benefit due to ERP Implementation

Below for a strategic planning report processing from various departments is enlisted which lead to a powerful budgeting and real time planning.

- **Real-Time Financial Dashboards**

  - Use dashboards to communicate information quickly, effectively and in real time

  - Monitor any financial measures that are important to your role—whether you're a CFO, controller, finance manager or analyst—through key performance indicators (KPIs)

  - Get personalized visibility into bookings, billings, receivables, period-on-period performance, actual vs. budget and actual vs. forecast, and much more

  - Provide all team members with access to the latest information—including reminders about required daily tasks, such as viewing overdue invoices or accepting payments—as part of their day-to-day activities.

- **Detailed Visibility from Summary to Detail**

  - Drill down from any indicator or report to the live underlying transaction or customer record, eliminating the need hunt for supporting detail

  - For example, drill down from days' sales outstanding (DSO) measures to an aging report and then to the underlying invoice and customer information—all with only a few clicks.

- **Financial and Operational Reporting**

  - Take advantage of more than 100 standard reports, including income statements, balance sheets, consolidated reports, variance reports and side-by-side comparisons—ideal for internal or external reporting

  - Create and define customize financial reports according to your business needs

  - Easily email, share or export reports to formats such as PDF, Excel or Word.

- **Powerful Budgeting and Planning**

  - Eliminate error-prone spreadsheets with sophisticated budgeting, planning and "what-if" financial modelling capabilities

  - Power your business performance with a real-time, end-to-end business management solution for strategy, planning and execution

Identify variances between your plan and actuals, isolate the organization and account responsible for the variance and drill into the transactions contributing to the variance

5.4 Organizational Benefits

ERP implementation changes the work pattern to Bangla Trac Ltd.,facilitating business learning,building common visions. In case of a parts ordering process no of wrong order was 30%, whereas now its counting is zero. At the same time double entry of parts in previous system was 40% of error and wrong tracing cause 30% error and recently all those errors are completely eliminated by implementation of ERP.

Organizational benefits in Supply Chain Management

No.of error due to wrong count 30%

No. of error due to double entry of parts 40%

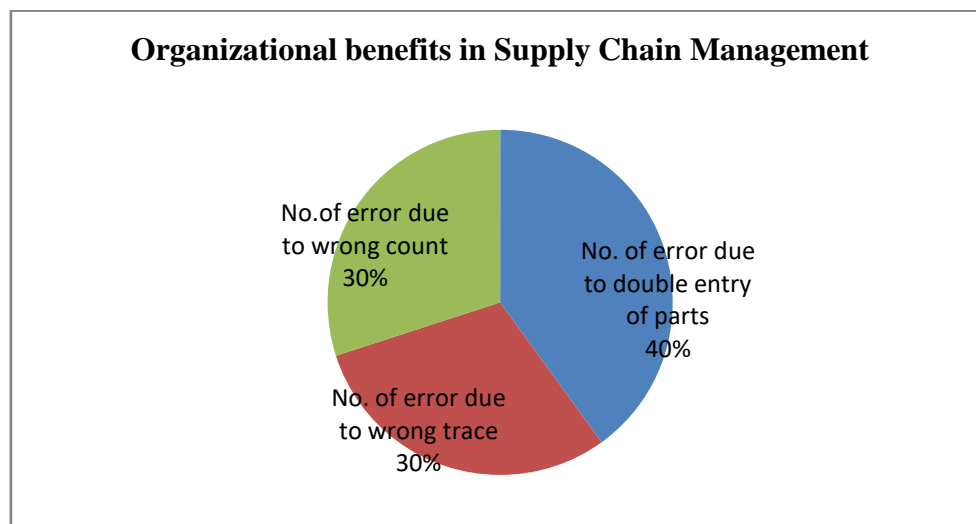No. of error due to wrong trace 30%

Figure 5.3: Organizational Benefits in Supply Chain Management

5.5 Some Documented Benefits of ERP System

In the below table documented benefit are listed for Bangla CAT.Where comparisons is done among post & pre ERP implementation.Before ERP implementation the amount of paper needed for invoicing and delivery challan is around 10,000 and now this amount is successfully reducing to 4,000; this due to one copy of the document were kept by finance division and one copy by the supply chain division.

Online requisition for any inbound or outbound purchase also reduce in a great amount, before implementation of ERP it was 8 requisition per day, whereas now it is 40 requisition per day and without online requisition no requisition is granted by the organization.

Description	Before	After
Reduction In Paper forms	NA	1500 fewer forms processed
Duration of Monthly Closing	10 days	4 days
Duration of semi-annual Closing	4.5 month	2 month
Availability of budget reports	Hardcopy Monthly	Online daily
Online Access	100 users	300 users
Creation of Account Codes	Manual	Automatic
Alert	0	15
Approval Process	Manual	Electronic
Online Requisition	20%	100%
Paper Requisition	10,000	4,000
Auto Created Purchase order	0	150
Days between letter of credit draw downs	30	7

Table 5.2: Comparison between pre & post ERP implementation

5.6 Risk Factors Associated with ERP Implementation& Suggestions for Overcoming Risks

ERP Systems Integration is not without risk. Projects can go over time and budget, fail to create optimal business processes or even fail when risk factors are not mitigated and adjustments are not made. Several factors should be considered when developing an approach to risk mitigation in ERP Systems Integration Project:

- **Number of Integration Points:** Projects that attempt to integrate everything at once, sometimes called "the big bang approach," are prone to adverse results due to the extreme complexity and large number of interdependencies. Scale down the scope of first few projects and focus on quick, easy wins while the team increases its capabilities.

- **Changing Requirements:** When the use case has been poorly thought through, requirements can change frequently and create chaos in an ERP integration project. Make sure you spend enough time in the requirements gathering and process planning phases to gather the best possible set of requirements for your project.There is nothing wrong with using agile methodology, but it still helps to have a clear vision before you begin.

- **Inadequate Integration Infrastructure:** Undertaking an ERP integration project with the wrong infrastructure to support the team can lead to serious issues and excessive costs. Avoid solutions that rely on manual programming or overly complex, heavy middleware software sets. Focus on single stack, single studio solutions with an integration platform for enterprise class integration projects.

- **Impossible Schedules:** Aggressive schedules are fine but impossible schedules must be avoided. Set realistic expectations by establishing an accurate estimate of the integration efforts required for your project. If necessary, bring in an outside firm to provide an estimate of the effort required.

- **Staff Turnover:**Changes in project management, business analysts, developers, and stakeholders can complicate completion of a project. Try to avoid turnover by gaining commitments from participants that they are available for the expected duration of the project.

- **Inadequate Change Management Procedures:** Some organizations lack the formal methodology to handle change orders. In addition, changes to the ERP and other systems being integrated may not be locked down during the integration project. The result can be chaotic from a requirement, implementation and testing perspective.

- **Lack of Staff and Management Experience:** ERP integration may be new territory for IT staff and management. Try supplementing your experience with proven consultants or consulting firms that can leverage experience across a wide array of ERP integration projects.

- **New Business Processes:** Introducing change to an organization always carries with it the risk of institutional or market resistance. Make sure the processes have been vetted by stakeholders and customers and that they are introduced properly so as to gain maximum adoption and adherence.

- **New Integration Infrastructure:**New or unproven integration infrastructure represents a risk factor. Make certain vendor experts are available to back up the team not only with technical bugs but with implementation experience and best practice advice and or services.

- **Inadequate Testing Plans:**Test plans should introduce testing early and often. Test scripts and automated testing may be able to help ensure accelerated and more complete discovery of problems early in the ERP integration project.

By considering these ten factors as per circumstances, an organizationmust develop a plan to overcome risks and ensure project success. The value and benefits of ERP integration are clear.So it will not be wise to become muddled by a poorly planned project.

CHAPTER SIX

RECOMMENDATION AND CONCLUSION

6.1 Recommendation

It is well established that quality implementation ERP software is an asset of any organization. For modern business technology it should implement in every organization for develop competitive advantage. For properly implementation of ERP system of an organization following recommendations are made:

- It controls all the business processes of an organizations, it should be user friendly and understandable for the employee.
- Understand the organization needs and Management requirements from the system to develop the software.
- Need proper training for the employee and all the process flow should be documented.
- Maintain security of the system and give Limited access as per his/her requirement.
- Maintain the system maintenance properly.

6.2 Conclusion

Prior research has pointed out different benefits of using such systems. Some researchers have claimed that ERP systems encourage economic growth, as ensured by return on assets (ROA), return on investment (ROI), and asset turnover (ATO) that organisations do not implement ERP systems to achieve such benefits but rather to deal with their outdated legacy systems. Others have argued that ERP can be part of achieving a competitive advantage in some situations the reported benefits of ERP systems have been weakened by research conducted which revealed that many utility companies attained less than 50% potential value from an ERP implementation. Explain how ERP users have reported drawbacks with the lock-in of their organisation's processes and principles into a specific software solution. If the organisation fails to merge the business requirements and the technological aspects of the ERP system, there may be a conflict between the system logic and the business logic. If there are shortcomings in the service and product delivered, there may be an extensive switching cost as well as the costs to combine the ERP system with other software products

References

[1] Wisner, Leong, and Tan, Principles of Supply Chain Management: A Balanced Approach (3rdEdition)

[2]Ellen Monk&Bret Wagner, Concepts in Enterprise Resource Planning (4th Edition)

[3] http://www.banglacat.com

[4] http://www.lawson.com

[5] http://www.infor.com

[6] http://www.datawatch.com

[7] https://en.wikipedia.org/wiki/Enterprise_resource_planning

[8]http://www.alzheimer-europe.org/Research/Understanding-dementia-research/Types-of-research/The-four-main-approaches

[9] https://www.coursehero.com

[10]http://it.toolbox.com/blogs/integrate-my-jde/10-risk-assessment-factors-for-erp-system-integration-projects-65372

[11] http://go.sap.com/product/enterprise-management/erp.html

[12] https://www.microsoft.com/en-us/dynamics/erp.aspx

[13] http://www.webopedia.com/TERM/E/ERP.html

[14] http://www.sage.com/us/erp