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ABSTRACT

Enterprise Resource Planning (ERP) systems are enterprise wide systems which integrate and automate all of a company's business processes.

This thesis was made for ABC mart. The primary goal of this research was to find out the outcome of the implementation of an ERP solution at the ABC Mart.

The theoretical part of this study deals with optimization of business benefits. In particular how implementing a continuous improvement program that includes incorporating benchmarking of ERP best practices to optimise the business benefits. Other issues that have been addressed in the theoretical part comprise of background information on ERP systems, the ERP implementation and barriers to ERP business benefits.

The findings of the case study report both positive and negative results from the implementation of the ERP application at the retail chain. The analysis section contains an in depth look into the possible causes of the lack of the anticipated business benefits and finally recommendations on how to optimize business benefits are provided.

The final part of this thesis provides documentation of related material such the anticipated and the actual benefits from the ERP system at the retail chain, a summary of the interview questions with the retail chain's IT manager, a post implementation checklist, and references.

Key words: ERP systems, ERP implementation, continuous improvement, ERP optimization, ABC Mart.

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1 Introduction

1.1 Background

In the recent years, many companies have implemented Enterprise resource Planning (ERP) applications in the hopes of achieving dramatic improvements in the company's overall efficiency. The changing demands of customers and the increased competitiveness in the market industry have led to the advancement in client-server architectures which created enterprise-wide solutions in commerce (Rivetti et al., 1999).

The concept of the enterprise has become particularly important in relation to information technology. Thus, Enterprise Resource Planning (ERP) systems, which were originally developed to keep track of materials in the supply chain, have become complex solutions capable of supporting and enhancing virtually all transactional and non-transactional processes within the enterprise (Vernon, 2002, 72).

Enterprise Resource Planning (ERP) implementations have helped corporations to drive down costs and operate in a more efficient way. ERP has further allowed department heads to view their data more easily and manage it more effectively. It also has streamlined a host of manufacturing and distribution processes, ranging from product development to order processing to the cataloguing of goods.

However, along with the promises of the ERP system, are the perils attached to it. Yi (2002) asserts that the system has its own risks also. However, the reality is that most ERP projects do not appear to be delivering the envisaged promises. In fact, Yi also claims that the current success rate of the ERP applications is only fifty percent.

A recent study by *Ventana Research* indicates that "companies are underutilizing their enterprise resources planning (ERP) system. Companies have invested a lot of money and time in the ERP applications and yet many companies are failing to use well-established capabilities of these systems in ways that will reduce their costs, improve customer satisfaction, and support strategic initiatives". Therefore, this is a common problem area that needs to be addressed.

1.2 Research problem and thesis objectives

ABC Mart is a local retail chain in Kenya. ABC Mart decided to implement a retail ERP solution in 2004 to improve the Information Technology system and enhance its business process. The retail chain's old computer system had resulted to gradual decreasing profit and increasing computer problems such as loss of data, information overload, computer viruses, inconsistency, and longer computation periods.

Following the implementation of the Lawson solution at the ABC mart, the retail chain was anticipating an improvement in their business processes.

With the negative performance from the ERP implementation, the retail chain wanted a comprehensive study in order to find out where the retail chain was going wrong and what it can do to improve their business processes.

Through the case study, this study aims to:

- To establish the outcome from the ERP implementation project at the retail chain, in particular, the extent to which the project met its objectives, delivered planned levels of benefit, and addressed the business needs as originally defined.
- To determine if further improvements can be made to optimize the benefit delivered.

The findings from the case study display contrasting results of ERP implementation at the ABC Mart. Recommendations on how to optimize business benefits from the ERP system through the implementation of continuous improvement are suggested. The recommendations offered by the student are not intended to be all inclusive. The student recommends further studies into the ERP application at the retail chain

As a result, this study is useful to anyone new to ERP systems and IT or project managers.

1.3 Research Method

The research method applied in this thesis is case study. A case study is an empirical research method that observes a specific event or an activity in a limited environment and uses the data collected from the observations.

From the secondary material, the researcher will go through the task of identifying and analyzing information that has been already compiled and published in any form on ERP implementation. The secondary data will allow the researcher to have the convenience of gathering data efficiently and effectively. The materials are readily available in various databases, libraries and online materials.

2. Literature Review

2.1 Enterprise Resource Planning Systems

2.1.1 Definition:

ERP is the acronym of Enterprise Resource Planning. As defined by Deloitte consulting; An Enterprise Resource Planning system is a packaged business Software system that allows a company to:

- Automate and integrate the majority of its business processes
- Share common data and practices across the entire enterprise
- Produce and access information in a real-time environment

ERP seeks to streamline and integrate operation processes and information flow in a company. The software attempts to integrate all departments and functions into a single computer system that can serve all departmental needs.

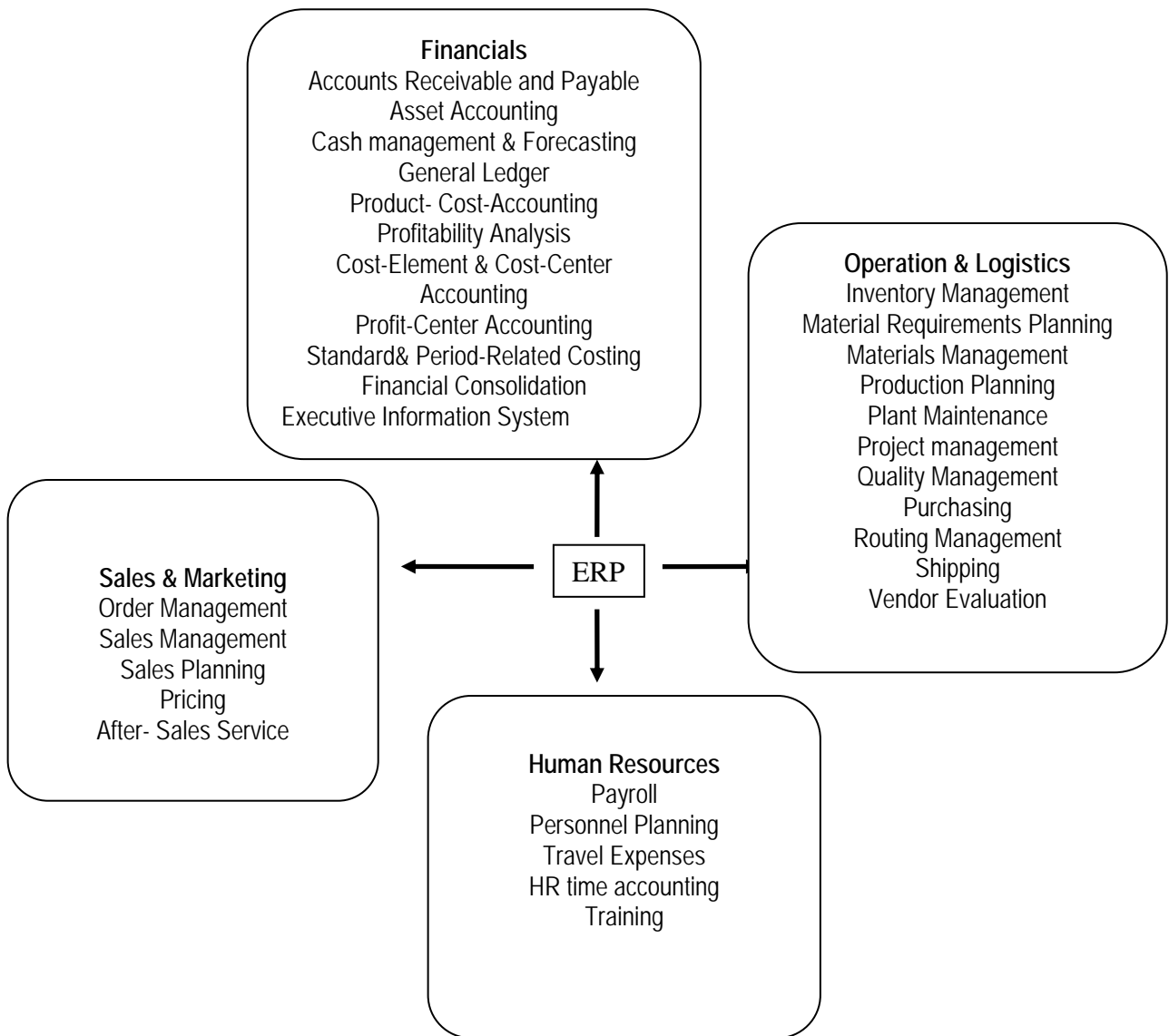


Figure 1: Source Davenport (1998) and Chen (2001)

2.1.2 ERP market and vendors

The ERP market has continued to benefit from the widespread acceptance of the idea that businesses must have integrated information systems to be competitive. Management and Information technology organizations are realizing that the most effective way to satisfy this need is to purchase an ERP package that features broad functionality and pre-built integration.

ERP serves as an information backbone for a company core business processes (Forger 2000). Given the importance of the ERP systems, many companies have been implementing ERP systems. ERP software now makes up the largest portion of corporate information technology budgets.

Looking into the future, AMR Research anticipates an average annual growth of 10% over the next five years. According to a recent research report released by AMR, the enterprise resource planning (ERP) applications market grew to \$25.4B in 2005, and will reach \$29B in 2006.

ERP vendors ranked by the highest 2005 revenue are SAP, Oracle, Sage group, Microsoft and SSA Global respectively.

2.1.3 Evolution of Enterprise Resource Planning Systems

The roots of Enterprise Resource Planning (ERP) started in the late 1960s and early 1970s with the use of computers and computer systems in manufacturing companies. Those early applications of the computer as a tool to manipulate and store data began in the finance area. Finance used the computer to reduce manual record keeping and filing systems for payables, receivables, general ledger and payroll. The logical progression of the computer as a tool to help run the business was to apply computer capabilities on the operations side of the business, specifically to help plan, schedule and order material. This technique was called Material Requirements Planning (MRP).

By the end of the 1970s, with computers now affordable for almost all businesses, thousands of companies began MRP implementations to better manage their businesses. Companies rushed to implement this new tool to help them better manage inventories, improve material shortage conditions on the factory floor, reduce purchasing costs and improve on-time customer delivery.

As more companies began to implement and use MRP to plan, schedule and order material a select few companies began to realize that to yield the full benefit of MRP, it must be viewed and managed as a company operating system. This second generation of MRP, known as Manufacturing Resource Planning (MRPII) provided an expanded range of functional tools.

This improved capability meant that all functions in the business, including senior management, sales, engineering, finance and quality, now began to utilize an integrated set of tools to help manage their operations.

The evolution of ERP has been paralleled by more developments in Business intelligence; Electronic Data Interchange (EDI), e-commerce, Customer relationship management (CRM) and Supply chain planning. ERP vendors are spreading into the domains of CRM and SCP to offer complete solution. Currently ERP products are available to address all business functionalities. However, in most cases, the customers do not need all the functionalities at a time.

This has led to a new trend of component-based solutions. ERP vendors are in the processes of providing component-based product. A firm may decide to buy only sales and finance components, and can add materials and production later. This address the budgetary constraints and the customer will pay only for what he needs.

The start of 2000s decade is marked by ERP II. Enterprise Resource Planning has evolved into an outward focused Web-enabled application, which allows for the extension of the applications to external suppliers and end-users. Gartner innovation defines ERP II as a business strategy and a set of industry-domain-specific applications that build customer and shareholder value by enabling and optimizing enterprise and inter-enterprise, collaborative operational and financial processes (Gartner Inc., 2000)

The main reason why ERP II came into existence was the need to look at a way to give customers and partners access to scheduling, delivery, and inventory, manufacturing, invoicing, and planning information. Many businesses are looking to improve and extend processes, offering customers, suppliers and other trading partner's access to integrated processing (Satish Gaonkar 2003). This is done through concepts like self-service functionality, and aims to deliver more efficient and effective processes with reduced costs.

The boundaries of the enterprise systems have shifted and now extend to customers and suppliers who are outside the organization. With ERP II the customer, the vendor, the supplier and the company all work in unison.

As noted earlier, ERP systems are used to integrate and optimize an organization's internal manufacturing, financial, distribution, and human resource functions. In contrast, ERP II addresses the integration of business processes that extend across an enterprise and its trading partners. ERP II forms the basis of Internet-enabled e-business and collaborative commerce.

2.1.4 Rationale for Implementing ERP systems

Organizations have used different rationales for implementing ERP systems. O'Leary 2002 has identified four different rationales namely:

- 1) **Technology rationales:** are technology problems companies faced with their old computer systems, hence motivating them to adopt the ERP system. For instance disparate, obsolete, non Y2K compliant, unable to support growth and poor quality existing systems.
- 2) **Business process rationales:** Competitive rationale is the need for companies to stay competitive in business aim at improving a companies' overall performance. For instance, personnel and inventory reductions, cash management, IT cost reductions are some of the reasons why a company may decide to adopt the ERP system.
- 3) **Strategic rationales:** are strategies which companies wish to implement through where existing software does not support. Strategic rationales are likely to be based on goals of improving customer relationship and overall quality as well as the backbone that can be used to provide a base for electronic commerce.
- 4) **Competitive rationale:** In this case purchases are premised on the need to stay in business. Firms basically adopt the ERP system because the competitors have it.

2.1.5 Benefits of an ERP system

The benefits derived from the implementation of the ERP systems are not mainly from the move of adopting a new technology, rather than the changes created by the system on the organizations. Through the ERP systems, companies are able to update not just their obsolete systems but as well as the antiquated processes. (Yi, 2002)

An ERP system that has been properly implemented, can achieve exceptional benefits for an organization. According to the companies like NIKE, DHL, Tektronix, Fujitsu, Millipore, Sun Microsystems, the following are some of the benefits they achieved by implementing ERP packages:

- 1) Reduce paper documents by providing on-line formats for quickly entering and retrieving information.
- 2) Improves information access and management throughout the enterprise.
- 3) Provides solution for problems like Y2K and Single Monetary Unit(SMU) or Euro Currency
- 4) More efficient cash collection, say, material reduction in delay in payments by customers.
- 5) Helps a company to achieve competitive advantage by improving its overall business process.
- 6) Improves timeliness of information by permitting, posting daily instead of monthly.
- 7) Greater accuracy of information with detailed content, better presentation, fully satisfactory for the Auditors.
- 8) Improved Cost Control
- 9) Gives Accounts Payable personnel increased control of invoicing and payment processing and thereby boosting their productivity and eliminating their reliance on computer personnel for these operations.
- 10) Faster response and follow up on customers
- 11) Better monitoring and quicker resolution of queries
- 12) Enables quick response to change in business operations and market conditions.
- 13) Improves supply-demand linkage with remote locations and branches in different countries.
- 14) Provides a unified customer database usable by all applications.
- 15) Improves International operations by supporting a variety of tax structures, invoicing schemes, multiple currencies, multiple period accounting and languages.

2.1.6 Disadvantages of implementing an ERP system

There can be limitations and pitfalls to ERP applications as well. The degree of success of the ERP application depends on the skill and experience of the work force, including education on how to make the system work correctly. Many companies try to cut costs by cutting user training which is a major problem in the long run. Some of the disadvantages of the ERP include:

- 1) ERP systems can be very expensive to install. ERP vendors can charge sums of money for annual license renewal that is unrelated to the size of the company using the ERP or its profitability.
- 2) Technical support personnel often give replies to callers that are inappropriate for the caller's corporate structure. Computer security concerns arise, for example when telling a non-programmer how to change a database on the fly, at a company that requires an audit trail of changes so as to meet some regulatory standards.
- 3) ERP applications are often too rigid, and difficult to adapt to the specific workflow and the business processes of some companies.
- 4) System can suffer from the "weakest link" problem. In this respect, inefficiency in one department or at one of the partners may affect other departments.
- 5) Many of the integrated links need high accuracy in other applications to work effectively. A company can achieve minimum standards, and then over time "dirty data" will reduce the reliability of some information.
- 6) Once a system is established, switching costs are very high for any one of the partners (reducing flexibility and strategic control at the corporate level).

2.1.7 How does ERP create value?

Information systems have been functionally based and not integrated across multiple locations or functional areas. The same information was captured multiple times, in multiple places and was not available in real time.

Jobs and processes were narrowly defined and the division of labour was very common in the industrial revolution. Consequently, some information never made it out of different pockets of the corporation. Processes and job definition saw to it that the information remained a local good. When the information went global, there were different information reports of the same events. Therefore, there were information asymmetries between the different local and functional groups and top management.

Enterprise resource planning provides firms with transaction processing models that are integrated with other activities of the firm such as production planning and human resources. By implementing standard enterprise processes and a single database that spans the range of enterprise activities and locations, ERP systems provide integration across multiple locations and functional areas.

As a result, ERP systems have led to improved decision making capabilities that manifest themselves in a wide range of metrics such as decreased inventory, personnel reductions, speeding up the financial close process etc. Thus ERP can be used by firms to create value. In his book *Enterprise Resource Planning Systems: Systems, life cycle, Electronic commerce and Risk*, the author has O'Leary 2000 has identified ways in which ERP facilitates value creation by changing the basic nature of organizations in a number of different ways.

1) ERP integrates firm's activities

Enterprise resource planning are cross functional, forcing firms out of traditional, functional and locational silos. In addition, organization's different business processes are often integrated with each other. Further, data that were formerly resident on different heterogeneous systems are now integrated into single systems

2) ERP employs use of "Best Practices"

Enterprise resource planning systems have integrated within them a lot of best practice business processes. Those best practices can be used to improve the way that firms do business. Choice and implementation of an ERP requires implementation of such best practices.

3) ERP enables Organizational Standardization

Enterprise resource planning systems permit organizational standardization across different locations. As a result, those locations with substandard processes can be brought in line with other more efficient processes. Moreover, the firm can show a single image to the outside world. Rather than receiving different documents when a firm is dealing with different branches or plants, a single common view can be presented to the world, one that puts forth the best image.

4) ERP eliminates Informational Asymmetries

Enterprise resource planning systems put all the information into the same underlying database eliminating many information asymmetries. This has a number of implications. First, it allows increased control. Secondly, it opens up information to those who need it, ideally providing improved decision making information. Thirdly, the information is lost as a bargaining chip, since now the information is available both up down the organization. Fourth, it can “flatten” the organization, since the information is widely available, there is no need for a non value adding workers whose chief activity is to prepare information for upward or downward dissemination.

5) ERP Provides online and Real-Time Information

In legacy system, information is captured on paper and then passed on to another part of the organization, where it is either repackaged or put into a computer-based format. With ERP systems, much of the information is gathered at the source and placed directly into the computer. As a result, information is available on-line to others and in real time.

6) ERP allow simultaneous access to the same data for planning and control

Enterprise resource planning uses a single database where most information is entered just once. Since the data is available online and in real time, virtually all organizational users have access to the same information for planning and control purposes. As a result, this facilitates more consistent planning and control, in contrast to legacy system.

7) ERP facilitates intra-organization communication and collaboration

Enterprise resource planning also facilitates intra-organization communication and collaboration. The existence of interlocking processes brings functions and locations into communication and forces collaboration. The standardization of processes also facilitates collaboration since there are fewer conflicts between the processes. Further, the single database facilitates communication by providing each location and function with the information that they need.

8) ERP facilitates inter-organization communication and collaboration

The ERP system provides the information backbone for communication and collaboration with other organizations. Increasingly, firms are opening up their database to partners to facilitate procurement and other functions. In order for such arrangement to work there needs to be a single repository to which partners can go; ERP can be used to facilitate such exchange.

2.2 Implementing an ERP solution

2.2.1 Making an ERP implementation successful

What makes an ERP implementation successful? Failed ERP implementations are easy to identify, but what constitutes a successful ERP implementation? In order to evaluate the success of an ERP implementation, we must first define what constitutes a successful ERP implementation. The success of an ERP implementation can be defined in two ways.

The first definition of a successful ERP implementation is when an implementation meets the initial project requirements for going live, such as meeting deadlines, staying within budget and achieving system performance as expected (Robey, Ross and Boudreau, 2000).

The second and ultimate definition of a successful ERP implementation is the cost effective integration of complete business processes (Macvittie, 2001) using information technologies. Companies satisfied with their ERP software often list dozens of productivity enhancements, including process automation, improved efficiency, tighter integration, as well as elimination of bottlenecks and duplicative procedures (Plotkin, 1999).

ERP implementations can take years to complete and the process can be delayed or derailed by faulty planning and execution. Businesses rarely remain static and requests for changes in scope during the project can get out of control. The technology may work, but many organizations have often miscalculated the impact of process change. An Incomplete need analysis almost always results in understated costs of ERP implementations. Infrastructure and integration requirements, if incomplete, can also result in hidden costs. Managing time, scope, and money is truly a challenge when it comes to the implementation of these enterprise wide systems.

To ensure a successful implementation of the ERP application, the following 10 key considerations that organizations need to keep in mind when they undertake a successful ERP system implementation.

1) When ERP projects go wrong, the results can be disastrous

Having a successful ERP implementation is rewarding, however failing can be devastating. The software itself is rarely the cause of the big problems. In often times, the root cause is often due to the huge business and process change required with ERP implementations.

2) Prior to implementation, make sure you understand the initial need

Understand the value proposition and the business case for your ERP system. What are the key deliverables and objectives? What is driving the project? Where is the win? What assumptions does the sponsor hold? The answers to these questions will help the implementation team understand the target and the expected results.

3) Make sure you have a strong sponsor

The sponsor's level of commitment and support can have the greatest impact on the delivery of an ERP system. Issues and risks will likely get escalated to the sponsor if they are not resolved earlier. The sponsor can also serve as the champion for the project when conducting status briefings and training across the enterprise.

ERP systems can stretch resources beyond capacity, so you must have a rational project plan. Roles and responsibilities of every team member must be clearly defined to the sponsor and stakeholders. Strong sponsorship and project management can dramatically affect the outcome, as critical decisions are often required.

4) Vanilla is best

Stay with vanilla at all costs and use the standard off-the-shelf package with as little customization as is feasible. Once the enterprise has implemented the core modules it can phase in new features and build things around the edges, such as remote Web interfaces and wireless networking.

Plugging a vanilla system into a legacy system can be tricky, as there may be years of customization built into the original system. It is said that businesses building too much complexity into ERP systems can spend up to 30 percent more per employee on finance operations.

5) Success means change

Success means delivering change. Functionality must enable existing processes, or processes must change. Business process implications cannot be glossed over, no matter how arduous the task of process mapping/process engineering. What processes and functions are in scope?

Socialize change across the organization with key stakeholders and those most affected by change. Whether the changes entail the processing of payroll exceptions or creating journal entries, involve the most experienced end users as much as possible.

The Organizations that focus on technology and ignore the human element of implementations often fail. ERP by definition is about people, not just technology and organizations. Minimize the people side and run a larger risk of missing the target. In fact, process change is often part of the case for the ERP investment.

6) Create a Centre of Excellence team

Create a centre of excellence i.e. an oversight team in addition to the project management team. Vital to the success of an ERP implementation, is a strong tactical team that can manage change and drive toward stability. Most businesses are not prepared to manage the impact to their day to day functions during the implementation. This team is responsible for help desks, testing, training, documentation, database administration, and many other operational issues and problems.

The Centre of excellence team's functions are all closely coordinated with the go-live hand off for each milestone, and it can act as the "super-user" from day-one to help avoid chaos

7) Investing in business intelligence

In addition to managing operations more efficiently, common data enables ERP software to support more detailed analysis and reporting. Business intelligence (BI) is the engine. Business intelligence is the database of business rules that need to be defined for the benefits to be achieved. Building it takes time and enterprise-level decision making. Often, ERP systems are required to integrate with existing databases. The customer helps lead the BI effort and actively participates in integration. Some things can't be accomplished by the IT pro alone

9) Gap analysis

A comprehensive gap analysis as to what are the gaps between the how the system is and how the system should be. Identifying functional and non-functional gaps between the existing and planned systems is one of the first major tasks that need to be completed. It is highly recommended that the gap analysis be reviewed and approved by the executive sponsor.

An incredible number of details are involved in the implementation and integration of ERP systems. The vendor may provide an “off-the-shelf” implementation plan, but it does not know your companies integration requirements or functional gaps. So it is up to the organisation to make sure that it fully understands and accepts the functionalities to be delivered. Gap analysis is a major means of avoiding scope creep down the road and preventing delays due to misunderstood deliverables.

10) Risk management

There are many complexities associated with ERP applications. Know where the major pain points lie for your situation. The risks to the plan must be clearly defined and include an escalation plan. Are there technology risks? Are scarce skills required? Many risks can be mitigated through thorough testing. Testing business cycles is, by nature, a long process. Be certain to have a fallback plan for each implementation milestone where there are risks to mitigate. If the ERP system is for a small or medium size business with little or no legacy systems integration, the task is less risky. However, if a replacement of a large highly integrated, highly customized system is required, get ready for the unexpected. An ERP project should never begin without a clearly defined risk management plan that has the sponsor’s approval.

2.3 The ERP Life Cycle

The ERP application life cycle is the continuum of activities required to support an ERP application from the initial strategy all the way to the systems optimisation. Many companies fail to fully understand the relationship between technology and process. While it is technology that supports and enables the business process, it is through the optimization of the process that the capabilities of the technology can be realized. The ERP application lifecycle consist of two major phases; the Implementation phase and the Optimization phase.

2.3.1 Implementation phase

The implementation phase consists of activities that result in the implementation of an ERP application. These activities basically include:

- Defining the strategic direction
- Analyzing the business and technology requirements
- Obtaining funding for the project
- Acquisition of the hardware, software and integration services
- Implementing the enabling solution.

2.3.2 Optimization phase

During the optimization phase, organizations achieve results by continued planning and project initiatives aimed at streamlining the business processes, providing decision makers with better information and integrating applications across the enterprise. Although most organizations scale back their enterprise application project efforts after the system has gone live. The anticipated system benefits typically occur two to four years after implementation of the application.

ERP enabled processes are designed to evolve to live in time and to grow in power for those organizations that take the time and effort required to grow with them. Above all, the rewards go to those the company that venture into the wave where the greater benefits lie that is the post implementation's "Second Wave".

The Second Wave refers to the actions that are taken after going live that help organizations achieve the full capabilities and benefits of the newly ERP-enabled processes. Deloitte Consulting believes that there are a number of phases involved in the second wave.

The first phase which is referred to as Stabilize phase is basically when the companies familiarize themselves with the implementation and master the changes which just occurred. The duration of this phase is *3 to 9 months*.

The second phase is referred to as the synthesize phase. This is when companies seek improvements by implementing improved business processes, add complimentary solutions, and to motivate people to support the changes. The synthesize phase usually lasts from *6 to 18 months*.

The final stage, Synergize phase, is where process optimization is achieved resulting business transformation. The *Duration of this phase is 12 to 24 months*.

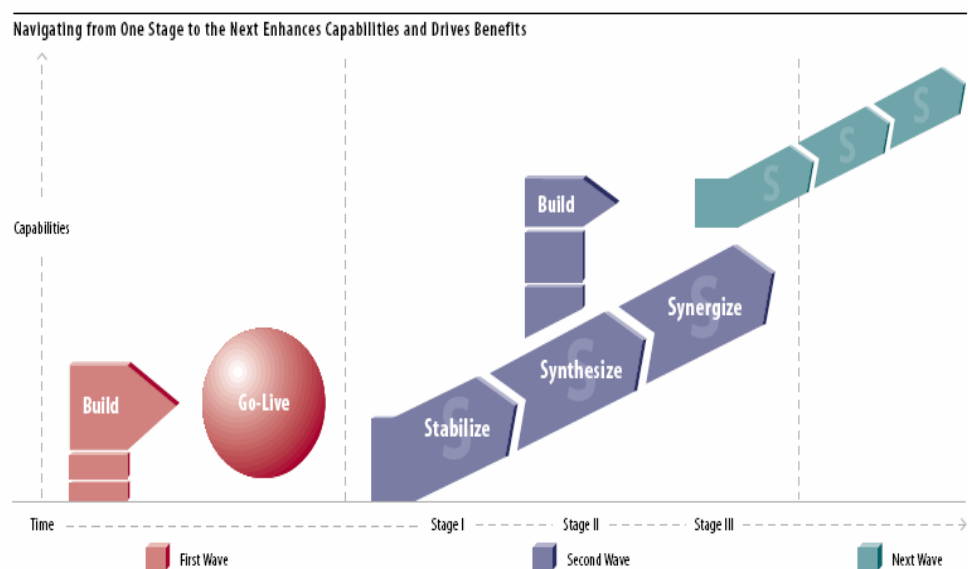


Figure 2 Source: *Deloitte Consulting*

Whether a company is in the ERP's First Wave or its Second wave, those greater benefits can start here. The benefits can be achieved by forcefully moving on into the deeper journey, where the fuller capabilities and benefits of the ERP-enabled enterprise are found.

Going Live with ERP Marks a Key Milestone in the ERP Journey



Figure 3 Source: *Deloitte Consulting*

Many companies are investing in the ERP software anticipating business benefits from the software. However, not all implementations have been successful in terms of achieving business benefits and completion on time and within the planned budget. So what happens when an ERP project does not deliver the envisaged benefits? It is impossible to go back to before implementation of the ERP solution or undo the implementation. Many companies are struggling with this particular issue today.

In order to exploit an ERP investment to drive maximum benefits with minimal costs, a firm needs a concrete process improvement plan to solve this challenge. Deloitte Consulting talks about the “Five Stages” of an ERP Implementation. These are "Project Implementation," "Go-Live," "Dip," "Recover & Stabilize," and "Benefits." Implementation teams are very good at getting complex ERP systems to go-live and then to support them after go-live.

However, immediately after going live, performance, productivity and morale usually decline. This is basically because the users are adapting to the new system and the processes. This is the natural "sink" in the new ERP system's lifecycle. Most teams are not structured, or funded for that matter, to help the business recover from this dip to the benefits stage, as this is generally not planned for apart from some level of system support. Through the implementation of a continuous improvement program, a firm can achieve the expected benefits from the ERP application.

Many companies fail to fully understand the relationship between technology and processes. While it is technology that supports and enables the business process, it is through the optimization of the process that the capabilities of the technology can be realized.

2.3.3 Benefits of ERP optimization

ERP Optimization can deliver significant business benefits. Basically, the benefits Include:

- 1) Reduced operating costs:
 - Reduced purchasing spend by better control of suppliers and parts used, better management of discounts and greater aggregation of purchase
 - Reduced labor costs by elimination of many manual tasks
 - Reduced system support costs by replacing non-standard ERP components with standard ones
 - Reduced system support costs and licensing costs by identifying systems that can be decommissioned and replacing disparate systems with ERP functionality
 - Reduced working capital
 - Reduced cash requirements by better forecasting and management
 - Reduced stock holdings by streamlining planning and ordering processes and implementing advanced supply chain planning functionality
 - Improved customer service
 - Reduced cycle times
 - Improved service levels by improving supply chain visibility
 - Reduced fixed capital
 - Identifying opportunities for ERP to be used instead of purchasing new solution
- 2) **Other benefits**
 - Increased ease of use
 - Improved user training and support

2.3.4 Barriers to benefits realization

In addition to the practices that enhance benefit realization, it is important to be aware of the challenges that limit benefit realization. Deloitte Consulting identified a number of barriers limiting the realization of “*second wave*” benefits (Table 2) and categorized these as People, Process or Technology related issues.

Barriers to benefit realization (Deloitte, 1999)

ERP Barriers	Focus
Lack of Discipline	People
Lack of Change Management	People
Inadequate Training	People
Poor Reporting Procedures	Technical
Inadequate Process Engineering	Process
Misplaced Benefit Ownership	People
Inadequate Internal Staff	People
Poor Prioritization of Resources	Technical
Poor Software Functionality	Technical
Inadequate Ongoing Support	Technical
Poor Business Performance	Process
Under Performed Project Team	People
Poor Application Management	Technical
Upgrades Performed poorly	Technical

2.3.5 Continuous Improvement

Continuous improvement, is one of the basic principles of total quality management, is an inherent consequence in an organization where ERP software is in use. The maintenance of the ERP software and installation of new releases on an orderly basis further assures that the system promotes the evolution of the organization in a continual approach.

Continuous improvement enables rough practices to be refined and tuned within reality of day to day operations and by those who are in best position to effect the change who are the employees. As a companywide practise, continuous improvement can be instated at any time although it does require organisation, commitment and planning. The outcome of the continuous improvement is the possibility that the benefits of the ERP application are realized.

Continuous improvement teams form to deal with specific issues or set of issues and disband when the issues have been dealt with or alternatively the teams may have a process focus whereby they are looking at a specific process and how it can be improved.

A recent industry research suggests that companies that continue to plan beyond system implementation are more likely to achieve their desired results than organizations ending their ERP initiatives after the initial implementation.

Continuous improvement is an approach for transforming business process and organisations. It embeds change management as a part of the improvement process, leverages the implementation of an ERP application and refers to both continuous improvement to existing incremental processes and larger more radical change. Continuous improvement recognises that there is a series of states that mark the transition from being out of control to one that is striving for excellence (Harwood 2002).

The first step is to attain a state of control. A simple approach to establishing control is to identify the problems and work in a systematic manner towards eliminating the problems. After establishing the problems, the next step is to move towards a state of improvement. Attention is now focused upon how to produce acceptable outcomes in an efficient way.

The third step is to move towards a state of excellence and the focus is upon the best practice and the approach adopted tends to be benchmarking (Harwood 2003 Benchmarking is the search out of the best practices and incorporation of those transferable elements of best practise to one's own processes). This three staged process provides a framework to guide the continuous improvement effort.

These best practices may be found internally, within the organisation or externally in competitor companies. As the search for the best practices become more and more extensive, the opportunities for completely fresh insight magnify. This approach offers the opportunity of significant improvements and optimal levels of performance from the ERP software moving the process owners to a state of excellence.

Through research and case studies, Deloitte Consulting have developed a repository of principles and practices that can now help organizations succeed at every step of the ERP journey after going live.

These are best practices that have been created to ensure that an organization reaps the full benefits that are possible after going live. With a clear focus on results, these best practices represent a prescription for what really delivers at this stage of the journey.

2.3.6 ERP Best practices

With ERP software, there are more opportunities to explore and exploit after going live. The real goal here is to acquire the full set of capabilities and benefits. The activities prior to implementation are intended to establish a foundation for benefits realization potential, while post-implementation activities are intended to measure and ensure that the benefits come to realization.

1. Alignment of the organization

During this time, the organization should ensure that everyone has the same vision about the original motivations for implementing ERP-enabled processes, what the targeted capabilities were, as well as the targeted benefits.

Aligning on the destination requires special focus on people; communicating, managing expectations, education, and top management support. During the post-implementation phase, milestones should be established for each stage, the dependencies between initiatives need to be identified and synchronized, the staff need to be deployed effectively and priorities must be set from process designs, education materials, role transitions, retention programs.

The realignment allows the technology system to adapt and refocus towards the organization's business goals. Nothing should be left to chance.

2. Focus on capabilities and benefits, not just going live.

For an ERP system going live as significant as it is, is only a point. Business benefits are why the ERP implementation took place. Therefore, a company should not rest until they get maximum performance from their investment. Business benefits should be milestones on the way to the full power of the integrated enterprise.

3. Achieve balanced people, process and technology changes across all areas.

Companies undertaking the ERP journey must make changes and take actions in all areas of the modern enterprise. They need the best-of-breed technology tools. The most effective work processes using top-notch practices, people who are trained and motivated and strategies that fully leverage these new organizational abilities that have developed from the implementation of the ERP system. Far from being a one-dimensional project, the ERP journey must keep change in play, and in balance, in all the areas, a fact that successful companies have put in mind before, during and especially after the implementation of the ERP system

4. Use of the business case as a management tool.

For successful companies, the business case is anything but a static, one-time exercise intended to secure funding. On the contrary, the business case is a dynamic management tool that should live as long as the journey and constantly evolve along the way.

In addition, successful companies use the business case tool in a number of ways: justifying the program, validating the design, setting post-implementation targets and managing to them, and prioritizing post-implementation change initiatives. In short, every time the business plan changes as well as the plan to capture benefits the business case should change as well.

5. Apply planning and program management practices throughout the program life cycle.

It is very crucial that the companies master program management and planning by the time the ERP system goes live. To achieve full benefits from their investment, a lot of planning is required. Successful projects are guided by rollout plans, milestone plans and detailed work plans. Key dates and deliverables that are due on each are spelled out and synchronized, while benefits scoreboards are created and results are tracked.

6. Transition project roles to into a way of life.

Information technology people, ERP experts, process experts, site leaders, the project manager and the steering committee are involved in the planning and implementation of the ERP software. Going live can involve hundreds of people and dozens of roles. After the system has gone live and is in operation, the roles change. The way the change is handled is very critical. Companies that have succeeded in the post- implementation phase are simply better at mobilizing and guiding such changes. Preparation of the

team members for the change is essential so that the team members are ready to get the full benefits in which they have invested. Also, the business blueprint must be studied against the current and actual instant in the system processes. This evaluates the effectiveness of the change management processes and procedures.

7. Build and leverage process expertise.

Process focus is, if anything, more important after going live since the company now has an even greater core of process expertise. Successful companies fully capitalize on this expertise and the power of ERP-enabled processes.

It is important to understand that ERP benefits come from the process improvements supported by the ERP and not from ERP software alone. ERP software can introduce new processes that can bring about performance improvements, but it is for the organization to decide which processes it wants to accept. After implementation of ERP, the business processes change.

If the businesses processes continue to be the same as prior to implementing the ERP system, chances are that there will not be any improvements.

One way is of capitalizing on this expertise is retaining process experts from the implementation team back into the organization, or by having some serve at centres of excellence, some as key process performers and some as business managers. Ultimately it is all about fostering continuous process improvement. After all, it is better that the process experts to manage continuous improvement and process renewal since they have mastered these techniques as part of the implementation team. Successful companies never forget the point of the integrated enterprise: that it is not about ERP so much as it is about people involved in ERP-enabled processes.

8. Extend capabilities beyond the ERP foundation.

ERP provides a solid foundation on which to run a business. As a backbone technology, ERP delivers more powerful benefits when companies do their utmost to build on that platform. In doing so, successful companies turn to a host of complementary applications that generate return on investment, from advanced planning and scheduling to warehouse management to sales force automation. Successful companies also pay closer attention to the constant stream of innovative new solutions developed by today's software developers.

9. Promote post-implementation commonality.

Promote a common system, a common language and common practices. Commonality is a key focal point. It is also a point that needs to be emphasized once the implementation team has left. After companies go live, there is a real risk that ERP systems will revert back to the same non-standard systems and processes they were meant to replace.

Common information is seen at the same time and provoking largely the same conclusions. In terms of complete change, commonality is perhaps one of the most undervalued benefits of the ERP environment really a stealth benefit, since it is so hard to quantify.

Successful companies use process owners to promote and ensure commonality of post-implementation modifications as well. This helps preserve and promote commonality and the Integration benefits that come with it.

10. Teach the organization to use new capabilities.

The natural progression from building capabilities is by actually using them. It is imperative to train and motivate the end users to understand how to use the new system as well as how to perform their new processes and job functions.

11. Assign clear ownership of benefits.

During implementation, it is usually clear that the responsibility for going live on time and on budget ultimately belongs to one person, the project leader. But again, going live is only an interim destination. Therefore, after going live, who owns the benefits that are being targeted?

In most companies, that is a difficult question to answer as no one has been identified as the owner. In successful companies, accountability for results is no mystery. The owner may be the business unit leader, a project sponsor, a process owner or someone else. What is most important is that there is somebody some person whose fortunes ride on realizing benefits

12. Define metrics and manage to them

To succeed, companies need to set target, establish budgets, and make it happen especially after going live. Operational and departmental metrics should be established as they are useful to holding managers accountable for contributing to the potential benefits of technology. The operational and departmental metrics must in turn be translated to individual metrics so that individual employees can understand how each employee performance contributes to the success of the entire project.

2.3.7 Benefit realization tools

While benefits realization focuses on an integrated set of activities, it also entails a number of tools that can be used to effectively perform the tasks. In his report, *how to achieve maximum value of ERP technology*, Eric Kimberling has outlined specific tools that when implemented correctly, have proven to be very useful in realizing the business value of an ERP application. The benefit realization tools include:

a) Business Case and Metrics

Traditional financial and cost-benefit analysis is a useful tool for outlining and documenting the high-level benefits to be achieved by the proposed technology. In addition, it is useful to also examine industry benchmarks to gain a more accurate understanding of the potential benefits of technologies. Consulting and benchmarking firms are often invaluable sources of data regarding the impact of information technology on actual performance and metrics.

b) Organization Culture Management Tools

In order to measure a company's cultural gaps, it is helpful to conduct an Organizational Culture Inventory (OCI), which measures the current and ideal culture in different areas. This tool helps identify the biggest gaps to enable these areas to be address as part of an IT project. If the large gaps continue after go-live, there will be significant end-user resistance to the associated changes.

c) Process Modelling Tools

There are a number of approaches that can be used to model and document processes. PA Consulting states that the most effective approach used by successful businesses has been to use a best-of-breed model as a starting point and then tailor it to fit a company's unique operating conditions. This approach is more accelerated and time- and cost-effective than undergoing complete business process reengineering from scratch.

d) Skills Gap Matrices

As part of the job and organizational design activities, it is helpful to develop a matrix that identifies the required skill set for each major job type as a result of the new technologies and processes.

This matrix can then be used to compare required skills to actual skills, which can then act as a catalyst for developing training requirements. It is important to capture both technical skills as well as business process skills in these matrices. It is also important to evaluate every major job area that will be impacted by the upcoming changes.

e) Process and Organizational Change Implementation Plans

While organizational design and process models are nice to conceptualize and document at a high level, it must not end there. It is equally, if not more, important to identify the changes that are necessary to arrive at the “to be” process and organizational states and to develop corresponding change implementation plans to make the changes actually happen

f) Benefits Realization Scorecards

Once projected organizational and individual target performance metrics have been identified, it is useful to develop scorecards to track actual benefits performance after go-live. These scorecards serve as an effective communication vehicle to disseminate performance results throughout a company.

3. Case Study

This section presents the case study of a retail chain; ABC Mart. ABC Mart has already implemented the retail ERP software. By definition, a case study is an empirical research method that observes a specific event or activity in a limited environment and then uses the data collected from the observation. The case describes the implementation process of an ERP (enterprise resource Planning) system at ABC Mart, the largest retail chain with a total of twenty eight outlets in Kenya. It discusses the organization’s major concerns including increasing competition, inefficiency of business processes, and lack of timely and accurate information.

To address the major concerns, ABC Mart implemented new strategies. A key part of the strategies was to increase efficiency through implementation of an ERP system. Through the case study, this study aims to:

- To establish the outcome from the ERP implementation project at the retail chain, in particular, the extent to which the project met its objectives, delivered planned levels of benefit, and addressed the business needs as originally defined
- To determine if further improvements can be made to optimize the benefit delivered

The case study also explains the implementation process. More specifically, the case focuses on the benefits accrued from the ERP system and the challenges that the ERP system is currently facing. Finally the case concludes with a discussion of the possible causes for the lack of the full benefit realization.

The following information provided in this study is based on ABC Mart's reports and interview with the IT manager of the on June 15, 2006.

3.1 Company background

ABC Mart is a public limited company established in 1975. ABC MART is the oldest and largest retail chain operation in Kenya's operates a network of twenty eight retail outlets throughout the country. ABC MART is a business unit that can be categorized under the retail industry. Its workforce is amounted to 2500 employees wherein the IT staff is only about nineteen employees.

The retail chain recorded sales of approximately sales of approximately 8.4 Billion Kenya Shillings (approximately 117 million \$) for 2005 and increase of 23 percent from the previous year's 5.8 billion shillings (about 80 million dollars). Recently, the company has been facing stiff competition from other retail chains.

3.2 Rationale for implementing the ERP system

In 2000, the retail chain announced a 68 percent decline in earnings. This marked the beginning of a downward trend for the company for the following three years. Prior to this, the supermarket had reported profits annually for 14 years consecutively. During that period, the retail chain had maintained a significant growth in turnover and had no long term liabilities.

To address the issues, the retail chain decided to adopt new strategies. A key part of the strategy was the streamlining of operations through Information Technology and with this, the company settled on adopting an ERP system. The ERP system was to help the retail chain by improving its overall

efficiency in management of inventory and sales as well as gaining competitive advantage.

After a careful screening and evolution process of suitable ERP software by the management of the company, the decision to adopt the Lawson solution was made. The retail chain decided to implement ERP in 2004 to improve the Information Technology system and enhance its business process. The retail chain's old computer system had resulted to gradual decreasing profit and increasing computer problems such as loss of data, information overload, computer viruses, inconsistency, and longer computations.

The major problems with the information systems at the retail chain included:

- Lack of timely and reliable information.
- Lack of integration among existing systems.
- Duplicate systems for a number of functions.
- Lack of flexibility. Most of the current systems were designed following rigid structures that do not allow the IT staff to easily update the systems. When they were designed no appropriate programming tools were available.
- Lack of proper system documentation.
- The IT department is mainly concerned with maintaining existing systems
- There is not enough time and expertise for new developments.
- In accounting, finance and sales divisions information has to be handled or consolidated using special programs.
- Systems are not user friendly.
- Lack of standard IT policies, rules, and procedures

The retail chain also felt the need to structure the company's human resource so that they could retain only the productive staff. Another reason was the company's aim to deliver goods and services to customers more effectively in their most convenient time. Retail chain also aimed at improving its competitive advantage over all other retail chains in the local market.

Before the implementation of the ERP application, each retail outlet ran its own IT system to suit its particular needs. There were more than 20 independent systems, including two parallel systems to process purchases, another two to keep warehouse records; another two for manufacturing; another two for cost and finished product control, and two more for marketing. Furthermore, there were five systems for payrolls: two for labourers, two for clerical workers and one for staff. Lotus 123 and WordPerfect were the standard office software products. The main task at the IT division was maintenance.

Management, in general, was a challenging task and they often missed some important aspect like internal communication, performance assessment, and supplier evaluation since focusing on sales was their priority. The following are some of the major situations in the business process before the implementation of the ERP system.

- Tracking and scheduling with customers and suppliers was too demanding. It took the retail chain a longer time and so it needed more management staff to process everything.
- Customer support was inefficient because there was lack of automation. For example, customer loyalty was difficult to assess so it was difficult whom to prioritize when there are promotions of special offers.
- There was too much paperwork which demanded overtime or homework for management staff. This was costing the company more money as overtime meant more pay for the employees.
- The flow of information or communication was slow because of slow IS processing (e.g., it was impossible to immediately submit financial reports or summary when executives wanted them for review because it took much time to re-check them; there was no centralized database to control and monitor all the company's branches so information needed was acquired through a long process)
- Human resource management was not improving since there was no standardized system of evaluating their performance. Improvement on performance was not emphasized much because they focused more on increased sales. Thus training and evaluation was not given to employees. Instead, the company relied on the previous experiences and existing skills and knowledge of the employees they hire.

The IT manager's main challenge was to put in place a new information system for the company to replace old systems that were typically fragmented, duplicate and inconsistent. In addition, the ABC Mart had no experience on the new ERP application that was to be installed. In addition, the retail chain had very few IT employees before the implementation of the ERP application, the Information technology department employed 19 employees and they reported to the financial manager

3.3 Anticipated benefits from the ERP system

Re-engineering the Retail chain was a significant step toward achieving competitive advantage. Thus, the company implemented Enterprise Resource Planning system with the following expectations:

- Reduced cost on managerial budget including fewer human resources to lessen salary allocation, decreased number of office materials (computers, papers, folders, file cabinet, telephone, computer units), and minimized business travel (business transaction in distant places and surveys could be done through electronic mails or internet calls).
- More efficient and faster business process like business-to-business (B2B) and business-to-customer (B2C) transactions (e.g., dealing orders with suppliers or products and services to customers)
- Increased profit: Generated reports are a useful source of to find out what are the more profit generating items hence increasing the inventory of those items. Your inventory reports will help you to stock more products that give you greater profits and lesser items that give you lesser amount of profits
- More effective product and warehouse management
- More effective human resources and customer management

3.4 The solution

ABC Mart wanted minimal technological changes. Changes to be made in the organization were restructuring of executive and managerial positions and redefining the roles and responsibilities toward the company and their constituents to promote productivity and improve overall performance and business processes. Lawson retail solutions software was chosen which was aimed at least to allow the company to have a centralized system of information. The retail chain was also aiming at a low cost implementation as it was on a tight budget.

The Lawson Retail Enterprise is exceptional in how comprehensively it assists to drive for success through four main solution categories: Enterprise Operations, Retail Operations, Enterprise Visibility and Retail Insight. Lawson integrates these areas into a single set of solutions which encompasses store operations, supply chain, distribution, merchandising, human resources, marketing, financials and analytics.



Figure 4 Source: ABC Mart

Following the implementation of the Lawson Retail Solutions, would the retail chain could discover hidden business costs by automating processes in payables management, financial, human resources and procurement areas. Also various redundant tasks are eliminated, and workforce can be able to complete more tasks, more accurately and in less time. In addition, the package could also supports revenue growth while allowing control of costs, therefore contributing to total net profitability.

3.5 Implementation process

The decision to implement the ERP system was made and ABC Mart contracted the Consulting Group, Pricewaterhouse Coppers to manage the entire procurement process. The group also retained to quality control the entire project and to ensure that it conformed to international standards.

The implementation of the Lawson software was carried out in a phased approach. In this method the modules were implemented one at a time. The modules implemented were Human resource, Finance, procurement, inventory, management and supply chain. The system went live in October 2004. The implementation took in average about 18 months to complete.

The company chose to espouse the technology-enabled reengineering approach to ERP implementation. Their rationale behind this is that they want to change the business process of the company in such a way that the software would fit to them. Aside from the lower cost of this reengineering approach, the company also wanted to restructure the business process of the company. That is the reason the retail chain settled for the technology-enabled reengineering approach.

The implementation was considered a success in that it was completed within the allocated time and budget. After the application went live, performance, productivity and morale declined as people adapted to the new system and processes. The vendors and ABC Mart worked together to stabilize the system. The technical problems with the Lawson software seemed to be short lived.

Retail chain has undergone the following process in ERP implementation:

1) Identifying the rationale and justifying the need for ERP

The company determined the reason for adopting and the cost benefits of the software to the business process and resources management. For example, specification and quantity of products could be used in delivery and inventory, interim payment claims, and ordering of supplies. Information was recorded in the database.

2) Re-engineering approach

Re-engineering approach was minimal change in organization and technology. The company also included business plan which served as the direction of the ERP process.

3) Designing and testing the software

The company initiated software development and testing to ensure that any possible technical problems, errors, or challenges could be managed and fixed if need be. This is important to protect data and information to be stored that are essential to business process and company improvement.

The outputs were compared and troubleshooting was made improve the new software and overall performance of the ERP system.

4) Managing changes in the company

An effort to improve leadership was made to improve team performance. Company orientation was given to old and new employees, trainings and seminars was offered to competent individuals, and effective communication between executive officers and staff was encouraged to talk about their work-related concerns and needs

3.6 Post Implementation

3.6.1 Challenge

Although the retail chain underwent effective development, testing, implementation, and management of the ERP project, problems have become inevitable due to the increasing customer expectations and increased competition and challenges due to the existence of new opportunities from other companies.

In addition, Retail chain experienced failure of technology to meet its specifications in the business process (e.g., supply and sales management) and expectations for the company (increased profitability and performance improvement were not fully achieved. This was due to the complexity applying of ERP which was difficult to implement. The managers were complacent and let the employees on their own when they saw that the system was working. Finally, immediate change in the company was not realized as it was expected upon ERP implementation.

Towards the end of 2004, shortly after the implementation had been launched most experienced consultant assigned by the firm left the project. A much less experienced replacement came in and the IT manager thought that the IT personnel involvement would become critical and understanding the new project's functionality and ultimate success.

By that time, the retail chain had realized that implementing the ERP system had effectively introduced changes in *ABC Mart business* practices that would have a positive impact on the company's financial position. Some of the changes that the retail chain has experienced included the following:

- Availability of consistent information that suppresses the need for manual integration and reviews that was at the source of many human mistakes and was time consuming. With the new system, company managers had access to a consistent and single version of the data.

- **Standardization and simplification:** The Company started to use a single language. Products could be identified in a single way throughout the company and criteria for the various activities were likewise unified.

3.6.2 ERP benefits

Enterprise Resource Planning (ERP) can be a blessing or a curse. Many companies find ERP systems help them make better-informed decisions. Others discover too late that their purchase has been based more on faith than good judgment, and run up tens or even hundreds of millions of dollars in extra costs and schedule delays (Wagle, 1998). Indeed, Retail chain has experienced both – positive and negative results of ERP implementation.

The project was a success in that it was completed on time and within allocated budget. The Enterprise Resource Planning system now places all 28 stores, in contact with each other and the head office. The financial module automates the flow of fiscal information within the group, enabling management to access all records on accounts payable and accounts receivable, the general ledger as well as asset management.

The human resource module has enabled the management to capture data on employees, and all records are now stored and managed centrally. The distribution module provides a view of the entire group's supply chain and provides

ABC Mart with full inventory management. Stock levels in each store can be monitored and managed from a central point. The system also tracks merchandise from receipts at the ABC Mart warehouse where the product's barcodes are loaded onto the system, until the merchandise is distributed to stores, packed onto shelves and finally sold.

The systems auto replenishment solution enhances efficiency hence adding value to customer service. Delivery of products to the shelf and selling stock at the shortest time was a critical objective of the retailer. It was prudent for retail chain to invest in systems that enhanced efficiencies and cuts costs ensuring that the product would be on the shelves on time.

As a result of the ERP implementation, the retail chain has experienced certain benefits. For instance:

- Information processing was automated and there was a centralized database in which executives could access information whenever they need it.
- There has been an increased productivity of the executive officers. However, monitoring and evaluation of staff performance was irregular due to the complexity of ERP implementation which is time-consuming to study and analyze.
- Also the time taken to produce an end-of-month report has been reduced from three days to five minutes and the period for closing accounts at the end of every month diminished from more than one week to just two days without any need for the people to work overtime
- Paperless operation was achieved at 30% cost savings in 2005 compared to 40 % expectation.
- Travel allowance savings reached 80%. This is because some business transactions require personal appearance or some executive officers need to attend meetings, seminars or conferences for company improvement.
- Salary allocation savings in 2005 was only 5% compared to 30% expectation. The reason for this limited savings is that ERP does not actually lessen job positions but it only improves business and resource management.
- Reports were automated which improved decision-making and management performance.
- Retail chain was able to manage product resources through effective supply chain and warehouse management but loyal customers were not consistently monitored because the company focused more on increased sales and distribution.
- The expected productivity and quality of work of the human resources was not very satisfactory as it was expected because the new technology did not align with their capability. ERP implementation was not motivating and there was insufficient internal expertise.

With the ERP application, the retail chain has also implemented lean operations with some of its suppliers. This operation has been realized through the integration of its ERP system to those of the suppliers. As a result of the integration of the ERP systems has helped to monitor sales on a real time basis, calculate stocking level at each retail chain outlet and replenish stocks once a threshold point in the sales has been reached.

Overall, the retail chain has seen a reduction in the financial closing cycle. In addition, there was a reduction in procurement costs and inventory holdings, which led to savings on working capital. There was also an overall improvement in information sharing and decision making. Since the implementation of the Lawson ERP software, the company has saved millions of shillings which consequently led to an increase in their earnings.

3.6.3 Ongoing

Now that the ERP system is up and running that does not mean that it is the end of the implementation. Going live is only a point in time of the life cycle of the ERP system. Regular follow up and proper instruction should follow after the system has gone live and throughout the life of the ERP system.

As experience has shown, full benefits come only with continued focus and effort after going live. Companies must continuously to address the people, process, technology and strategy changes if the company is to realize the full benefits of ERP-enabled processes.

Efforts and steps should be taken to update and achieve better benefits once the system is implemented. Periodic review of the new systems and processes is important. Deloitte Consulting validate that going live is the end of the beginning of a journey toward improvement, innovation and agility.

3.7 Analysis

After an interview with the IT manager and studying the many complaints about the system from the help desk, it is clear that the possible causes for the underperforming system are people related rather than technology related.

Using the post implementation check list for guidance, there are possible reasons that are causing the ERP solution at the retail to have some negative performance. Some of the issues that emerged for instance are lack of user procedures, lack of training, and lack of discipline among the employees. Lack of training among employees is another area which slows down the implementation process.

One key to successful implementation is proper end user training. It is widely recognized that lack of user training and failure to completely understand how enterprise applications change business processes are important factors of failure (Wilder and Davis 1998). A comprehensive training programme should be organised to educate end users of the functionalities and features of the product and also the discipline required to feed transactions.

Users must be properly trained to fully utilize the functionalities of the newly implemented ERP system so that it can deliver on the software's capability to reduce costs, improve processes and save time spent on each transaction. To achieve long term benefits, it is recommended that training of the users be continued even after the system has gone live. This helps the users to become experts in using the new systems and in the long run, it helps to increase benefits from the ERP investment. In this particular case, the retail chain discontinued with the training after goes live because they were satisfied with the performance and preferred to keep their costs low. Due to this the performance, is not getting better since some of the workers are slipping to their old working methods prior to the implementation of the ERP solution.

Failure to retain some of the experts from the implementation team, was another problem. The implementation team left immediately after the system was up and running. As previously stated, one key to successful implementation of an ERP system is the retention of the experts as they are skilled and have the capability to help the rest of the team in case of any software related problems as well as help the employees learn get accustomed to the new system.

In addition it is important to allocate funding even after the go live of the system. In this case, the team lacked funding to help the business recover from drop in performance to the benefits stage as this was not planned for apart from some level of system support.

Another possible factor that might contribute to the underperformance of the ERP system at the retail chain could be that the company concentrated more on the go live. It is very important point to remember that the ERP system is merely a business tool. Implementing the system does not fix the business problems. Operational business processes offer most of the potential benefits. It is time that the retail chain shifted their focus to the business operations. This is where the real money comes in from improving operations.

There needs to be an intensive examination of the negative outcome in order to fully realize the benefits of ERP as an IT application for business improvement. In addition to the business and technology rationales, strategic and competitive advantage should also be given equal attention.

In order to succeed in ERP implementation, IT managers and staff should be equipped with necessary skills and knowledge of ERP before carrying out the continuous improvement programme. Finally, consistency in managing both tangible (profit, budget, technological infrastructure, products) and intangible assets (customer relationships, employee relationships, research, training and development) of the ABC Mart should be enforced to balance work performance and work condition.

4. Recommendations:

4.1 Making the Transition to Optimization

To break this cycle of ERP project that has failed to meet the envisaged expectations, the retail chain must develop and execute a plan that addresses the entire scope of the project objectives and manages the impact of the company's human capital.

In order to make the transition from system implementation to application optimization successfully, the retail chain should consider the follow the following steps:

1) Conduct an assessment of the current state

Before determining the future of the ERP application, an assessment of the ERP application's current state that is how, what, where and why it is where it is should be conducted. It is important to get an independent assessment to determine the state of the ERP system. A team comprising of business, application and technology owners should begin with an evaluation of the entire ERP application lifecycle and conclude with a clear understanding of the present lifecycle stage. The assessment should include a review of the original system objectives, project performance to date and industry best practices to identify projects for system optimization. The review is not the end of the implementation; it's merely a transition event marking the shift into the next major phase of the ERP implementation cycle.

2) Get a Handle on Operations

Most of the benefits from ERP applications are derived from projects that improve business processes. Such projects are for instance adding new application functionality, extending applications to employees and business partners, integrating data with other applications, providing executives and managers with business intelligence tools for better decision making and so on.

To clearly focus on the value-added initiatives, it is recommended that a company must first overcome any performance or application management issues. Before moving forward with optimization initiatives, ensure that ERP system operations for change control, service packs, environment synchronization and release management have been stabilized.

3) Implement a Continuous Planning Process

After conducting the current state assessment and stabilizing the operations, the future of the ERP application should be determined by implementation of a continuous planning process

The focus of the planning process is the development of a strategic plan for the ERP application. This strategic plan will serve as the roadmap that guides the organization's goals and objectives for the next three to five years. Within the strategic plan, the goals and objectives should be defined as projects that will serve as the action plan to achieve the retail chain's overall purpose for the ERP application.

4) Execute Achievable, Results Oriented Projects

Unlike the system implementation, the integration and optimization projects can be implemented as pilot projects and then rolled out to the organization in phased projects, lasting no more than three to four months. Examples of such projects are employee self service or business intelligence. By using this approach, the retail chain will achieve results faster and maintain the elasticity to fine-tune and control project schedules based on projects returns, lessons learned and resources requirements. Additionally, by achieving quarterly project milestones, the implementation team will gain a greater sense of accomplishment and credibility within the organization for its ability to generate results quickly.

5) Measure the results

Once the optimization phase projects are identified, project plans developed and resources allocated, the overall strategic plan should be monitored on no less than a quarterly basis. Success should be measured by the team's ability to meet the target dates outlined in the objectives and projects. Because results are to be achieved in the future (possibly three to five years out), project schedules may need to be adjusted based on lessons learned or as business and technology drivers change.

6) Create a continuous learning loop

Too often, companies tend to reduce their expenditures or the number of employees the company is willing commit to training following an expensive technology implementation. This usually results to failure by the employees to use all of the ERP features because of inadequate training or because of a natural resistance to change, the software benefits will erode over time, until the employees are only using a fraction of its capabilities.

At some point, the company has to return to base level training to protect its technology investment. It is essential that the management elicits feedback from the end-users in order to find out any knowledge gaps in order to take corrective action such as provision of extra training. If the users have the perception that software is the problem that perception tends to become a reality.

7) Change management

For most people involved in an ERP implementation, the whole cycle is a learning experience. ERP brings about a change in the business process with wide ranging implications in job profiles and functional relationship between workers, supervisors and managers. As a result, organisational structures may undergo drastic change. Some employees may have to be relocated, some may be transferred from one department to another, some may be laid off, and some may be promoted. This change brings about psychological fear among employees and they resist change and block the implementation process. It is therefore necessary for management to anticipate such issues and be ready with possible solutions during the implementation cycle. It is imperative that the top management assume responsibility and drive change management throughout the implementation cycle.

5. Conclusion

The implementations of ERP applications have often been characterized by negative return on investments, the absence of optimal system functionality, and late delivery of the business benefits. An ERP system is a significant investment, in terms of acquisition costs and maintenance as well as ongoing support.

Managing ERP solutions is a challenging task that many companies are facing today. For companies that have already implemented the ERP applications and those that are still implementing, optimization of the application is on the horizon. Lack of business benefits is mainly not as a result of technology failure rather that of management. Realizing greater value from ERP systems is simply a matter of focusing attention on the effective use and alignment of people, process and technology. It is all about the process.

For ABC Mart, all is not lost. With proper execution of a continuous improvement programme that will encompass the best ERP practises and tools to maximize benefits, proper change management, end user training, setting project targets and measuring the results, the retail chain can achieve its ultimate goal of optimizing the business benefits from its ERP application.

The success of an ERP application is primarily based on a company's commitment to continued planning and implementation of the optimization projects that extend the capabilities of their ERP application to achieve their desired results.

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7. Appendices

7.1 Appendix A -Tables

Table 1: ABC's Mart Business Plan and the expected benefits of ERP Implementation

Costs	Tangible benefits	Resources
Reduced cost in: a. improvements in demand planning – 30% b. Procurements-40% c. salary allocation – 30% d. resource budget – 40% e. travel allowance – 50% f. forecasting and operational improvements g. Annual finance productivity improvements	Increased profit – at least 5% increase yearly	Improved management: a) product resources – very satisfactory b) human resources – very satisfactory

Table 2: Expected vs. Actual Benefits of ERP on ABC Mart

	Expected benefits (1996)	Actual benefits
Costs savings:		
a) salary allocation	30%	5% (2005)
b) resource budget	40%	30% (2005)
c) travel allowance	100%	80% (2005)
Tangible benefits:		
Increased profit	at least 5%	at least 2% Net profit in Ksh : Dec. 2004 - \$1577 Dec. 2005 – \$1609
Improved management:		
a) product resources	very satisfactory	Satisfactory
b) human resources	very satisfactory	Satisfactory

7.2 Appendix B - A post implementation check list

As many firms agree, ERP projects succeed best when a firm knows what to do after the software is up and running. A firm should ask itself the following questions concerning the post-implementation plans and check if the team is prepared. O' Leary recommends that if there is a no answer, steps should be taken to turn the answer into a yes soonest possible.

1) The basics

Do you have a Post-implementation plan?

2) Benefit targets

Have you made ERP business benefits and capabilities part of the business planes of the specific general managers?

Have the projected business benefits of the ERP software been communicates to the rest of the organization

3) Project teams

Is your project team still in place?

Has the organization developed a retention plan for "hot skills" employees?

Are the project team members aware of internal career opportunities available to them?

4) Business Metrics

Are the business metrics in place to measure the projects intended benefits versus what has actually been achieved?

Has an owner been assigned to track each metric?

5) Project management

Have programs been put in place to help individuals cope with major role changes and the stress that comes with them?

Has the centre of expertise or ERP support organization been established to handle user questions, maintenance issues and upgrades?

6) Process Expertise

Is the management more process oriented than it was before the ERP effort?

Is there a reward program for employees who use the system?

Are requests for new reports viewed and approved by a process owner to avoid clogging the system?

7) ERP Foundation

Are there plans to extend ERP system's functionality?

8) Training

Is the training of your users job-based or beyond simple learning how to use the software?

Summary of Interview questions

- 1) What was the purpose of the project?
- 2) What did you like about the implementation process?
- 3) What things would you change if you had to do it again tomorrow?
- 4) Did the implementation of the ERP system meet your expectations?
Why or why not?
- 5) Was communication effective throughout the process?
- 6) Benefits Assessment. Were there clear benefits? Did they match against initial expectations
- 7) Next Steps for Project. Are there next steps for the system, such as upgrades
- 8) Lessons Learned. What lessons could be taken from this project and brought forward into other projects to maintain continuous improvement? How should this information be communicated so that it is not lost going forward?

7.3 Appendix C - Terms and Definitions

Sponsor

A project sponsor could also be called product sponsor, product manager, product director, account manager or business unit manager (Whitten 1999, p. 12). According to Kale (2000, p. 230), "the sponsor point is a senior executive champion of change who by his or her actions and communications helps in maintaining project credibility, momentum, and committed support throughout the company".

Vanilla implementation

Vanilla implementation is the one that minimizes changes to the ERP application. This means installing the software as it was delivered by the vendor and changing your business processes to match the way the software worked everywhere possible. This allows companies to improve their business processes. This approach reduces expenses in both the initial implementation and in future upgrades

Going live

Going live is the point in time in the ERP cycle when the system is used for actual production (O'Leary, 2000). For instance, customer orders are processed, invoices prepared and vendor cheques issues from the new ERP systems

Implementation

In the context of ERP systems, implementation often means putting the system in place and start live production on it (Robey, Ross and Bordeau, 2000). However, implementation can be extended to beyond the go live point (PA Consulting Group 2000. Usually such extended outlook includes the business processes that accompany the new ERP system.

Business process reengineering

Business Process Re-engineering simply implies eliminating tasks that does not add value to a business process while reorganization of the value adding tasks. Business Process Reengineering brings out deficiencies of the existing system and attempts to maximize productivity through restructuring and re-organizing the human resources as well as divisions and departments in the organization.