Implementation of Enterprise Resource Planning (ERP) as a Tool to Improve Competitiveness in Mining Industry: - The case of Hwange Colliery Company (HCCL) – (2010-2013)

By

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Dissertation submitted in partial fulfillment of the requirements for the degree of Master of Business Administration, Graduate School of Management, University of Zimbabwe

Supervisor: Eng. M. Manuhwa
DECLARATION

I, ……………….., do hereby declare that this dissertation is the result of my own investigation and research, except to the extent indicated in the Acknowledgements, References and by comments included in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.

_________________________                  Date________
Student signature

_________________________   Name: _______________   Date: ________
Supervisor’s Signature

____________________________________________________________________________________
DEDICATION

This dissertation is dedicated to my wife, Concilia and children Conley and Cornell for their support and as source of inspiration for me to see beyond what eyes cannot see.
Acknowledgements alone can not adequately express my appreciation and gratitude to the almighty god for his guidance and everlasting love. Special thanks go to Engineer Manuhwa for his advice, patience and relentless effort in guiding me throughout this research project.

Many thanks go to my loving wife, Concilia Nyamadzawo Charuma for the encouragement, special support and resilience throughout the difficult times.

Let me also take this opportunity to thank my friends and colleagues for their support in carrying out this dissertation project, notably Mr. B.C Ndlovu, Ms. M. Nyathi, Mr Forsen Moyo and Mr. Kondowe.

Last but not least, I would like to thank Hwange Colliery Company management for allowing me to carry out this research and all those who participated in the interviews and answering research questionnaires.
ABSTRACT
The research explores the implementation of ERP for competitive advantage by mining companies in Zimbabwe. Hwange Colliery Company was used as the case for the study. In the study, the following areas were looked at, benefits of ERP to mining companies, challenges that companies face during ERP implementation, assessment of readiness for implementing ERP and the alignment of ERP to the company strategy.

The objectives of the research includes establishment of motivation for ERP adoption, level of utilisation and to establish key areas that require management attention to ensure a successful ERP implementation process that would bring competitiveness to HCCL.

The research involves analysis of ERP implementation by Hwange colliery through survey and interviews. The readiness for implementing ERP was examined using McKenzie’s 7s model.

Based on the model, management style at HCCL does not promote successful ERP implementation. The aspect of unsupportive management style rated very high across the organisational levels, however some benefits of ERP adoption and implementation are realised in the following areas; reporting efficacy and accuracy, accessibility of information for decision making and cost control.

The research concludes that proper ERP implementation brings tremendous benefits and competitive advantage to mining organisations. The research also noted that management culture and style were not supportive of ERP implementation and recommends change management courses. The impact of management style and culture on ERP implementation needs to be further explored even outside mining sector since it rated high in negatively affecting the implementation of ERP at HCCL.
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<td>ELLIPSE</td>
<td>The latest brand name for ERP system that is marketed and sold by Mincom</td>
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<td>ERP</td>
<td>Enterprise Resource planning</td>
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<td>HCCL</td>
<td>Hwange Colliery Company Limited</td>
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<td>IPS</td>
<td>Implementation Planning Study</td>
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<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
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<tr>
<td>MINCOM</td>
<td>The vendor of the ERP system</td>
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<td>SISA</td>
<td>Strategic Information System Alignment</td>
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<tr>
<td>SMART</td>
<td>Specific, measurable, attainable and of time bound</td>
</tr>
<tr>
<td>TKMS</td>
<td>Tandeka Kaka Management solutions, the implementer of the system</td>
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CHAPTER ONE

1.0 Introduction

Hwange Colliery Company Limited (HCCL) embarked on a project to implement Enterprise Resource Planning (ERP) at a cost of USD 4.6 million in 2010 as a strategy to improve its competitiveness in the business of mining, processing and selling of coal and related products. Getman (2008) defined ERP as the integration of a company’s different business areas and processes in order to improve the efficiency and effectiveness of work processes and to have more cost control. ERP is an industry term used widely for the broad set of activities supported by multi-module application software that helps companies to manage the important areas of their businesses.

The business processes at HCCL include: coal mining, coal processing, procurement, inbound and outbound logistics, accounting, human resources management and sales. According to HCCL 2012 strategic planning document, the full implementation of ERP would unlock the great potential for HCCL to be agile in the wake of growing threat of new entrants in the coal business. The HCCL team however acknowledge that the process is quite challenging, complex and involves huge capital outlay.

Despite the complexity and the challenges involved in ERP implementation, companies in Zimbabwe are going ahead with the task of implementing ERP, siting great potential benefits from ERP. This research makes an assessment of the implementation of ERP at Hwange Colliery Company and the strategic implications on HCCL’s competitiveness. The researcher further proposes a framework to ensure that the organisation fully benefits from the ERP system.

The research examines the level of utilisation of this business management tool and compares it to the organisational expectations in a view to establish the relative benefits to HCCL and also note areas of improvement. The study also discusses the relevance and importance of ERP as an integral part of any meaningful business management tool in Zimbabwean mining companies.
1.2 Background to the Study

1.2.1 National Economic Overview and Mining sector

The economic situation in Zimbabwe where HCCL operates is characterised by high interest rates, political uncertainty due to the pending elections in 2013.

According to the finance minister in his 2012 Budget, mining companies are faced with the challenges of low capitalisation and low capacity utilisation of less than 50% as financial institutions are unwilling to fund companies to the required level so as to improve on production efficiencies.

Local indigenous banks have low capital base and little capacity to fund mining projects due to huge capital outlays requirements for most mining projects. Most mining companies lost their competitiveness before dollarization and during the 2008 economic recession. The hyperinflation conditions resulted in input costs becoming unsustainable hence the decline in exports and competitiveness in the mining sector as evidenced by closure of and/or reduction of production of several mines such as Ziscosteel, Marannata ferrochrome, Oliken Ferro alloys, and BNC which is still on care and Maintenance at the time of writing this report.

Zimbabwe mining and smelting company (Zimasco), the largest ferrochrome producer in the country is currently operating only two of its six furnaces, which is about 30% of installed capacity due to viability challenges caused by low metal prices on the world market. Quasi-government mining houses such as HCCL continued to post losses despite stabilisation of the economy after dollarization in February 2009.

1.2.2 Coal Industry

According to the Zimbabwe 2013 national budget statement, Coal output was projected at 4.8 million tons per year from the current 4.1 million tons per year.
The minister of finance noted that with the planned recapitalisation programmes at Hwange Colliery Company, coal output is expected to increase in 2013.

In Zimbabwe, HCCL has been enjoying being a monopoly, supplying coal for electricity generation, iron and steel industry and in the agriculture sector for Zimbabwe (Mahlabvani, 2012). The number of players has shot up since 2009 to five. Mahlabvani (2012) noted that these new players have resulted in slicing off of 45% of HCCL’s market share to these competitors. Regional competitors are from neighbouring counties such as Morupule colliery (Botswana), Maamba (Zambia), Moatize Mine, Vale (Mozambique) and Mittal from South Africa.

Local HCCL competitors include Makomo resources, Coal Brick (W&K), Limpopo Coal Mine, Sengwa Coal Mine. Mahlabvani (2012) also noted the major competitors posing a threat to Hwange Colliery Company’s local market share as Makomo and Coal Brick (W&K) which are now supplying power coal
to Zimbabwe Power Company (ZPC) where HCCL used to be the sole supplier.

1.2.3 Macro-economic analysis- PESTLEG

Political
The political situation in Zimbabwe is fairly unstable since the country is preparing for elections in 2013 after five years of Global political Agreement, GPA. The major government policy which seem to impact heavily on all business across all sectors in Zimbabwe is the indigenisation policy, where all companies with a value of more than USD500, 000 are required by government to give 51% to the local people through community share scheme. This policy has a bearing on both investors and existing companies which might opt to disinvest. This means that coal production would be negatively affected as private investors would be hesitant to invest on expansions to improve production output.

Economic factors
In the 2013 budget presentation, the Finance Minister, Biti (2012) noted single digit inflation in the country of below 5%. This shows a stable economic environment in the economy in which HCCL operates. Biti (2012) also highlighted that most of the economy’s growth during the period 2009 – 2011 was anchored by mining and agriculture. According to the minister, the two recorded cumulative growth rates of 57.2% and 49.8%, respectively. The annual inflation for the greater part of 2012 remained in the 3 - 4.5% band (Biti, 2012). Mining has become the most dynamic sector of the Zimbabwean economy, leading economic recovery since 2009, with an average annualised growth of more than 30%.

Biti (2012) also noted that there was a decline in commodity prices at the end of the year 2012. The situation was made worse by the Eurozone crisis which resulted in low prices for most minerals and metals. The low prices have seriously affected local ferrochrome producers with the only operating companies operating at below 30% of their capacity.
**Technological factors**

Save for the newly upcoming diamond mines, the majority of mines in Zimbabwe are still using old and inefficient technology for mining and metallurgical processing to saleable minerals and metals. The result is high cost structure and lack of competitiveness. The mining equipment at HCCL’s open cast mine is now old and requires backup spares to ensure that equipment availability is high to sustain high production volumes as demanded by the market. Coal production is expected to improve since HCCL has plans for massive recapitalisation in the coming year (Budget, 2013). The underground boost of the state of the art Continuous Miner (CM), a technology which is being used world over for underground coal mining.

**Social factors**

The labour market though now stable after dollarization in 2009, has been a challenge to most mining houses due to skills flight to neighbouring countries and abroad. It has been difficult to attract back the skills that left the country during the hyperinflation period in 2008. According to Professor Hawkins, an economic lecturer at the Graduate School of Management, labour cost in Zimbabwe is one of the highest in the southern region as companies try to contain the high cost of living at the background of low production levels as noted above. The high labour cost has serious implication on company competitiveness. ERP at HCCL has resulted in labour rationalisation, resulting in 200 employees being retrenched.

**Legal Factors**

The mining industry is regulated by the mines and minerals act, environmental management act through Environmental Management Agency (EMA), water act, air pollution act. HCCL being an international player has to go green in order to have strong international presents and appeal. There is no internationally recognised environmental management system such as ISO 14001 at the company. The ERP being implemented at the company should be able to accommodate all legal issues that govern the mining industries,
1.2.4 Assessment of Porter’s five forces on Hwange colliery

Porter’s competitive forces model, states that the survival of a business is determined by the following factors; rivalry with traditional competitors, new market entrants, substitute products, bargaining power of customers, and bargaining power of suppliers as illustrated on figure 1.1 above.

**Traditional competitors**
HCCL competitors are always devising new strategies to increase part of their market, among the strategies is market penetration pricing. HCCL competitors include W&K, Makomo resources, Tuli/Limpopo Mine, Sengwa coal mine. All these competitors are producing coal of various size grades or products for sale to small power stations like Munyati power station in Kwekwe, Bulawayo power station and Harare power station. These competitors are investing in new technology for washing coal at lower prices thus can afford to sale at low prices compared to HCCL that is operating old coal processing equipment which is costly to run.
New market entrants
According to the 2013 HCCL strategic plan report, there are now four main coal mines now operating in Mozambique, notably, Moatize, Vale, Riversdale and Ncondezi. These coal mines are currently concentrating mostly on coal export to markets that were traditionally served by HCCL. The new companies have new equipment, younger workers and very low cost of production. Exxaro in South Africa is planning to commission a 435 000 tpa coke battery by 31 December 2014. This will seriously affect the southern coke market. Botswana’s Industrial Coal market size (excluding power sector) is 33 000 MT per month and 98% of that is washed coal peas size. This product is similar to prime grade for HCCL. The coming in of the four big mines poses a huge threat to HCCL market both locally and internationally.

Substitute products and services
The substitute products that compete with HCCL products are Wood and diesel to fire boilers and wood for tobacco curing. Use of diesel is costly while use of wood invites penalties by Environmental Management Agency, Substitutes products might be used if coal prices become too high. The strong environmental laws ensure low threat of substitute products for HCCL products.

Customers
HCCL Customers can easily get product from competitor’s products. This gives HCCL little room to manoeuvre as far as pricing is concerned. According to a survey conducted in 2012 by HCCL marketing team, prices of coal products are going to decline both locally and at international level. The new coal mining companies are charging prices which are lower than those of HCCL so as to penetrate the market originally serviced by Hwange colliery. HCCL customers now have more bargaining power and can force prices of coal and related products to go down.

Suppliers
According to the 2013 strategic plan report, there are few suppliers of spares and equipment to HCCL due to the unique nature of the mining business
which requires equipment and spares of huge capital outlays. The suppliers have more bargaining power and have control over prices of their goods. These suppliers include Joy from RSA which supplies spares for the underground machines like the Continuous Miner (CM) and the roof bolter.

1.2.5 Value web analysis for HCCL

Figure 1.3 Value web Analysis

The value web is an interconnection that connects the value chains of business partners within an industry. This enables a company to respond quickly to changes in supply and demand. Elements of the value web analysis includes; the industry with its ERP and transaction systems, its customers, suppliers, partners and strategic alliances.

HCCL have some strategic agreements with equipment manufacturers and suppliers notably Joy from South Africa which supplies huge mining equipment such as continuous miners, Bell which supplies spares for the mobile equipment such as front end loaders and dozers. These agreements have minimised down times since Joy and Bell have an agreement with HCCL
where they ensure that there are buffer stocks of spares for the machines on site. HCCL simply draws spares and only services the accounts at the end of each month at negotiated rates. The ERP system at HCCL has helped in management of stockholding of spares from Joy and Bell since HCCL can now track items in stock. The arrangement ensures adequate and continuous coal supply to customers, thus minimising loss of market share due to failure to deliver required tonnages.

It is worth noting that HCCL ERP has not been linked to its suppliers and customers through some Supply chain management system (SCM), Supplier extranets and customer Relationship management system (CRM).

HCCL has also made a strategic alliance with a Chinese company, Hwange Coal Gasification Company (HCGC Pvt Ltd) to ensure adequate supply of coke to the customers. The arrangement is a BOT (Build, operate and transfer) where HCGC builds, operate the coke oven Battery and transfer ownership to HCCL after 10 years.

HCCL has numerous customers some of them ordinary farmers who have no existing ICT platform to link to. This makes the locking of customers through CRM an impossible task.

1.2.6 Background of Hwange Colliery Company (HCCL)
HCCL is located in the western part of Zimbabwe and is about 100km from Victoria Falls. The company mines, processes and markets different grades of coal, different coke grades, and coal carbonisation or pyrolysis by-products, such as tar, crude benzole and naphthalene oils. The company is listed on the Harare, Johannesburg and London Stock Exchange. The company is ISO 9001:2008 Certified by Standards Association of Zimbabwe. Whilst, the HCCL conducts its coal mining, processing and logistics activities in one location, marketing is done from Harare (Northern Region) and Bulawayo (Southern Region) suggesting that a single integrated solution such as ERP provides substantial benefits in sharing information among these strategic business units (SBU).
Strategic Importance of Hwange Collier Company
The Company is the backbone of the Zimbabwean economy as it supports a plethora of strategic industries namely; Power generation at nearby Zimbabwe Power Company, Bulawayo, Munyati and Harare power stations, Agriculture and as source of energy for tobacco curing, Ferrochrome as a raw material, Steel and allied industries as a reducing agent and energy source, Cement production as raw material and energy source, Brick making as energy source, Manufacturing for their boilers and source of heat energy.

HCCL Customers and coal Sales by Sector

Figure 1.4 coal sales by sector
HWANG COLLIERY COMPANY LIMITED
2013 EXECUTIVE AND SENIOR MANAGEMENT STRUCTURE

MANAGING DIRECTOR

CORPORATE AFFAIRS ADVISOR [2H]

SECURITY & LOSS CONTROL MANAGER [2L]

GENERAL MANAGER [OPERATIONS]

GENERAL MANAGER [FINANCE & ADMIN.]

PRODUCTION MANAGER

DIVISIONAL ENGINEER [2]

MEDICAL OFFICER - SURGERY

BUSINESS ANALYST

DATE:

Figure 1.5 HCCL organogram
Vision for Hwange Colliery Company
The vision for the company as quoted in the annual report for 2011 is for HCCL to become “a world class company in the business of mining, process, marketing of coal and related products”. (www.hwangecolliery.net)

Mission Statement
HCCL is committed to mining and processing of coal and associated products in a way that sustains the mining business and all the various stakeholders(Hwange Colliery 89th Annual report, 2011)

Strategic Intent
According to Hwange colliery’s 89th annual report (2011) strategic document (2012) growth of business will be through maintaining strong presents in existing markets and ensuring that operational costs are kept as low as possible.

Corporate Directional Strategy
HCCL’s chosen strategy is growth strategy through penetration of new markets and maintaining low operational costs(Hwange Colliery 89th Annual report, 2011).

Hwange Colliery Company Ltd Values
The HCCL strategic document(2012) cites Hwange colliery as being “guided”by the company values which ensures that the company do business in a way that does not negatively affect the environment.The following are HCCL values;

- Safety; the company takes safety as first priority to ensure that employees are safe and that there is safe working practise in the organisation.Safety awareness campaigns are done across the whole organisation.
- Continuous monitoring of employees productivity and performance to ensure that production meets company targets in terms of volumes and quality.
• HCCL values teamwork and believes that working as a team results in efficient and effective work processes which would ensure that company goals and objectives are met.
• HCCL values people with passion and enthusiasm when performing their duties for the company. The organisation believes that such individuals outperform those who do not have passion.
• HCCL values loyalty, dedication and dependability among its employees. The organisation believes that such people are the ones who have allowed HCCL to be where it is today.
• HCCL values people who are honesty and of high integrity. These qualities make HCCL a respectable organisation to those outside.
• HCCL values openness and transparency when conducting its business with stakeholders.
• HCCL values continuous improvement on its work processes.

Overview of ERP products being implemented at HCCL
The primary goal of ERP implementation is to address two primary concerns, notably;
• HCCL’s heavy reliance on spreadsheets for future planning.
• Spreadsheets are generally managed by individuals with the consequence that there is no corporate view of the status of coal in the supply chain and the status of each shipment.

This results in the following; reliance upon manual data entry often re-keyed multiple parallel systems and manual document preparation.

The above circumstances escalate the risk profile especially when critical matters become unstable and management needs reliable, accurate and timely information to take remedial actions. Accurate assessments of available coal and its specification, current contractual commitments and future production and sales must be visible at all times to control the processes.

The success of HCCL hinges on the fulfilment of the following:
• Ability to produce and ship coal and related products to contract specifications.
• Ability to deliver coal and related products within the contract period.
• Ability to react to changing market situations with flexibility and speed.

ERP has been adopted to assist HCCL significantly in streamlining the internal and external coal chain reporting processes and in the area of resource to market optimisation. It is important to note that HCCL’s existing legacy systems and some of the manual systems create silos in terms of information, and disintegration of business processes. Executives and management found it a challenge to have information online, in real time to help them make certain critical business decision timeously, and for reporting purposes. Management, after realising these gaps, made a decision to invest in Management Information System across the business to help manage information and business processes online effectively and efficiently through a preferred solution provider called Mincom Solution.

Mincom promised improved data quality and accessibility, improved management decisions making, lower cost, risk and complexities. The solution also promised legitimate auditable reports. The purpose of the ERP system is to improve management of the entire product supply chain. HCCL currently has many separate sources and repositories of product information. There is need for an enterprise view of this information from a single data source in order to provide a whole of enterprise view from ore extraction to product delivery.

According to TKMU1 (2010), the combination of the Mincom Ellipse, Mincom MineMarket, CCLAS, LinkOne and Mitrais Medical Suite provides the necessary solution components. An overview of the solution is provided below.

**Ellipse**

Ellipse reports summarised production data so that it can be integrated with financial information to provide production management reports. Ellipse records any equipment operating statistics that will be required to drive maintenance schedules based on equipment usage.
MineMarket - Logistics
The product supply chain management module, MineMarket-Logistics, is the solution to cover the entire mineral supply chain and trace product in discrete parts of the chain from ore to customer. It provides visibility of the same data across the organisation, allowing analysis, adjustment and reconciliation.

MineMarket – Sales
The Sales module provides an overview of the entire sales and marketing process. It provides accurate up-to-date information including contracts, invoices, bills of lading, customer invoices, and shipping information.

MineMarket – Quality
The quality module, MineMarket Quality, is a laboratory information management system that is the solution to automate processes such as sample registration, downloading of data and reporting of results. MineMarket Quality will be configured to use laboratory entries to provide a variety of results that can be distributed as required.

MineScape
Mincom MineScape is a mining management information system for the two mining methods at HCCL, namely underground mining and open cast mining. The system provides geological models and mine designing software.

CCLAS
CCLAS is a management information system (LIMS) that manages the entire laboratory’s analytical data. Quality control, turnaround time, data capture, and sample tracking can be accomplished with this LIMS system. It provides access control so only authorized individuals may access sensitive data. CCLAS can be configured to transmit and receive data from laboratory instruments and external systems.

Business Objects (MER)
Ellipse 6 delivers a new reporting infrastructure powered by Business Objects. The reporting solution replaces the other forms of reporting and will be the
predominant reporting mechanism used for obtaining Business Intelligence out of the customers' business data. By utilising commercial best of breed reporting solution customers are able to get real time quality reports and are able to extend the reporting capabilities into data warehouse and business analytics across their entire organization.

Assessment of HCCL using McKinsey 7-S Framework or 7-S Model
Harding (2003) defined the model as a systematic way for examining an enterprise or a way to analyse a company and draw action plans for ensuring that the organisation performance is enhanced. The model also assists to evaluate the effectiveness of the company to achieve its target or objectives. The model outlines seven key areas that influence the success of the enterprise, notably; strategy, structure, systems, style, skills, staff, and shared values (Harding, 2003). According to Harding (2003) the model assists transformational leadersto manage the challenges encountered when an organisation goes through a transformation phase. The model illustrates how the key elements are interconnected. The author noted that one has to look at all these elements in order to make an effective change since a change in one of them affects all the elements. ERP implementation is a life changing process for the all employees and users in particular. To assess the ability of an organisation to change, one has to look at these interlinked elements holistically (Harding, 2003)
Shared Values or Superordinate goals
These values determine the culture of the whole organisation and the way employees behave and are largely a reflection of the management style (Harding, 2003). The behaviour of employees determines the culture of the organization or the corporate culture. Values are central to the model and carry the identity of an organisation as it conducts business. HCCL shared values includes openness, safety, continuous improvement, passion, integrity, loyalty and teamwork.

Structure
According to Harding (2003) the Structure is the organogram of an enterprise and illustrates the reporting structure as well. The structure also outlines division of responsibilities among individuals and subunits, the level of authority and accountability. There are different types of structures and each has its own advantages and disadvantages. Harding (2003) cited the different types as centralised, top-down, decentralized. HCCL structure is a mixture of the different structures as illustrated on HCCL organogram above.
Strategy
Strategy is an action plan that an organisation put in place so that it is able to achieve its set goals or an action plan that an organisation takes to outwit its competitors and maintain a competitive advantage (Harding 2003). Agile companies have strategies that allow them to remain competitive despite having competitors in the same business. Strategy also involves the effective utilisation of resources by an organisation so as to achieve desired goals or remain agile in the face of competition (porter, 2000).

Systems
This is the designing of processes, procedures and sustaining the same to support the business activities (Harding 2003). Systems ensure a smooth running of the business and can be in the form of management information system, quality management system, ISO 9001:2008, Environmental management system ISO 14001, etc. Systems are the sequence of activities or procedures undertaken to ensure effective and efficient execution of particular processes or activities in an operation. HCCL has standard operating procedures for its quality management system which is audited periodically by Standard Association of Zimbabwe (SAZ).

Style
This is the way that top managers conduct themselves or behave in trying to achieve company objectives (Harding, 2003). The action of top managers in managing the business determines how much effort and attention they are giving to the success of the organisation. This attitude and way of doing business by top management reflects also the commitment and drive that they have on core business activities of the organisation.

Staff
This is the quantity of people or resources in an organisation. The quantity has to be adequate and match the activity requirements for the business to effectively achieve goals (Harding, 2003). Harding also noted that staff also refers to the type of people in an organisation for example contactor staff,
production personnel etc. HCCL has engaged contractors to assist in mining of coal due to inadequate mining equipment at its open cast mine.

**Skills**
This is the special or unique capability that the employees possess such as project management, ICT skills (Harding, 2003). Skill is a unique characteristic which an individual or an organisation possesses and which enables the organisation to perform better than others or where the organisation's performance distinguishes the organisation from others (Porter 2000). TKMU1 (2010) noted that HCCL had five ICT members with at least a BSC in computer studies but with no skill in ERP software and hardware as per the project requirements.

**SWOT analysis for HCCL**
The SWOT analysis relates to the Strength, weakness, opportunities and threats of an organisation. Normally the strength and weakness are internal factors which have a bearing on the performance of the organisation while the opportunities and threats are largely external factors.

**Strength**
HCCL has a well-established mining technology in the form of continuous miners, drag line and well established rail and road systems to enhance coal mining and movement to the markets. The mine is also endowed with a large reserve of coal of high quality. The company also managed to retain high skills base through payment of critical skills allowance during the hyperinflationary period. According to the TKMU1 (2010) the company has 5 ICT personnel with at least a Bachelor of Science degree in computer studies. The company has also managed to maintain good relations with its transporters and customers such as National railways of Zimbabwe and Zimbabwe Power Company.According to TKM (2010) management information document, HCCL has an established MIS project team. There is a sound IT infrastructure such as VSAT, PCs and Laptops to support ERP Implementation.
Weakness
The major weakness for HCCL are high overheads cost. The labour is huge and requires rationalisation. There is also low compliance level to environmental issues. There is risk of litigation since the company owes EMA close to half a million on Environmental charges. The other weakness is that the IT personnel have no experience with the new software and hardware that came with the ERP system. Some departments are still using manual system (TKM, 2010).

Opportunities
There are great market opportunities due to stabilisation of thermal power stations such as Hwange, Bulawayo, Harare and Munyati. These are huge markets for Hwange colliery thermal coal. There is also a huge offshore market for coking coal (coke market report, 2012). There is the opportunity of beneficiation of coal fines. There is an opportunity to group and standardise all MIS data across the organisation through ERP (TKM, 2010).

Threats
Threats to HCCL business includes;
- Inadequate transportation of products to customers
- New entrants in the coal mining business
- Low coal and coke prices caused by low competitor prices
- Litigation due to failure to comply with environmental issues.
- Potential loss of technical skill
- High cost of some required products of Mincom, consultancy and licences

1.3 Research Problem or Problem Statement
HCCL is in the business of mining, processing and selling coal and related products to both local and international markets. The business is facing viability concerns as evidenced by;
- Significant working capital constraints as confirmed by delayed payment of creditors to over 120 days as noted in HCCL financial reports.
• Posting of losses month after month despite the stable prices and high demand for coal and related products such as coke, tar and crude benzole.

• Failure to meet contractual orders in time resulting in loss of market share to upcoming coal mining and processing companies such as South Mining(SM), Hwange Coal Gasification company (HCGC), Chibondo and Makomo Resources that are operating in Zimbabwe.

• Running on hand to mouth of critical raw materials and spares due to poor planning.

• Sub-optimum laborutilization from the mining through to the metallurgical processes.

• Inability to timely carry out essential capital replacement and expansion programs, coupled with failure to execute effective preventative maintenance of critical equipment to enhance equipment availability.

HCCL still relies heavily on spreadsheets for future planning. These Spreadsheets are generally managed by different individuals in the various departments, with the consequence that there is no corporate view of the status of coal in the supply chain and the status of each shipment. This results in reliance on manual data entry often re-keyed and multiple parallel systems. These circumstances escalate the risk profile especially when critical matters become unstable and management needs reliable, accurate and timely information to take remedial actions. Accurate assessments of available coal and related products and specifications, current contractual commitments and future production and sales must be visible at all times to control the processes. The system is generating numerous significant errors and this result in inaccurate management information being used for decision making.

1.4 Research Objective

The study is premised on the following objectives:

1. To establish HCCL’s readiness and the level of utilisation of the ERP system so as to enable comparison between current level and planned
or optimal utilisation level during the 2010 to the 2013 implementation period.

2. To establish the alignment of the ERP management tool to the corporate strategy of Growth and low cost leadership.

3. To establish the extent to which ERP has been able to satisfy the expectations of HCCL workers and management so as to identify and recommend improvement opportunities that could be realised through optimal utilisation of the ERP as a management tool.

4. To establish key areas and recommendations that require Management attention to ensure a successful ERP implementation process that would bring competitiveness to HCCL.

1.5 Research Questions

1. What is the level of utilisation and HCCL readiness for ERP implementation?

2. Is the ERP system aligned to the HCCL corporate objectives or growth strategy and low cost leadership?

3. To what extent has ERP been able to satisfy the expectations of HCCL workers and management?

4. What are the key areas for a successful ERP implementation for HCCL?

This study intends to provide a detailed investigation of the strategic issues around ERP implementation by HCCL.

1.6 Proposition

The research proposes that there is no planning and optimal resource allocation at HCCL. HCCL employees are in reactive mode rather than proactive one from strategic level down to operational levels throughout the product value chain. Counter to this proposition is that: An effective and efficient implementation of the ERP system at HCCL will resolve its viability problems and give it a competitive advantage over its rivals.

1.7 Justification of the Research
The study is necessary or important in that:

(a) It generates enough evidence to draw attention of the directors and shareholders to warrant approval for further funding of the ERP system on key areas currently not integrated to the current ERP system thus enabling HCCL to harness the full benefits of the system.

(b) It minimises crisis management in HCCL and in the mining sector in general.

(c) The study provides a framework for integration of all divisions, departments and sections on a real-time basis.

(d) The study encourages an enterprise wide database that would ensure that all stakeholders access the same data. This eliminates any discrepancies in reporting from different departments. Reports will be standardized throughout the whole organization. Unlike the current status, where reports are produced in isolation from information gathered on spreadsheets and obviously prone to human errors and inaccuracies.

(e) Fully utilisation of ERP provides a way in which HCCL can integrate all departments and make it easier to manage the various activities of a large organisation such as Hwange colliery. The different systems at HCCL store data and provide information on various processes but are not integrated so as to share information to each other. It takes ages for Managers to gather enough information necessary for decision making. The information has to be integrated so that managers can access the information that they require in no time for quick decision making.

1.8 Scope of the Study

The study covers ERP implementation and impact on Hwange Colliery Company limited. The detailed research seeks to establish the gap between envisaged benefits and actual performance. The research covers all HCCL operations starting from the coal mining operations, Metallurgical processing, sales, logistics, marketing and finance. Resources that are easier to manage
through the utilisation of ERP such as human resources, equipment parts and spare, maintenance, production and SHE are examined. Data sources include both primary and secondary sources. Primary data is obtained from;

- Interviews of ERP users and executive management,
- Surveys,
- Direct observation.

Secondary data is obtained from;

- Company strategic plans reviews
- Mincom publications
- Company Annual reports and Newsletters
- National & Regional newspapers,
- Finance journal,
- ERP implementation documents

1.9 Ethical issues.
In carrying out the interviews respondents were allowed to respond on free volition without being forced to respond to questions that they are not comfortable with. The researcher took recognition of the following obligations to HCCL;

- The researcher made a commitment to notify HCCL were conflicts of interest exist.
- The researcher will keep confidential information and use the information solely for the research.
- The researcher will not misrepresent facts or withhold information that is vital to the research problem.

1.10 Limitations to the study
- The researcher is limited by time to visit other mining companies that are using ERP.
Sourcing financial resources to execute tasks is a limiting factor. The tasks include visiting all mining companies that have an ERP system such as Bindura Nickel corporation, Zimasco.

The company may not be at liberty to release information that it too confidential to the organisation.

1.11 Dissertation structure
Chapter 1: The chapter provides an overview on the research framework, the reasons for embarking on the research and how the process or research is carried out. Chapter 2: The chapter gives the theoretical aspects of the subject that is being studied and outlines what is known about the subject being studied and lays the foundation for the study through the provision of relevant theories and concepts on the subject. The theories should be from known researchers.
Chapter 3; Provides in detail the research design, philosophy, methods and procedures used to gather information on the subject under study. The possible limitations to the study are also highlighted.
Chapter; 4 provides data Presentation, Analysis, interpretation and Discussion (PAID approach)
Chapter 5; the chapter proves conclusions to the findings from the research and draws appropriate recommendations to the organisation.
Chapter 6 contains some publications from which data for the literature on the subject being studied is extracted

1.12. Chapter Summary
The chapter gives a summarised overview of the whole study. The problem statement is defined; the expected benefits from the study, the methods for collecting of data, findings, discussion and conclusions are outlined
CHAPTER TWO

2.0 Literature review

2.1 Introduction of chapter

The literature review is an important assessment of the research in line with the study being carried out. The review shows the existing knowledge from different authors on the definition and benefits of ERP, its application in business as a management tool in gaining agility and competitive advantage. The study also gives challenges encountered by other enterprises in implementation of the ERP system.
2.2 Scope of ERP

2.2.1 Definition of ERP

Getman (2008) defined ERP as the integration of a company’s different business areas and processes in order to improve the efficiency and effectiveness of work processes and to have more cost control. ERP is also viewed as a software package aimed at integrating every function in a firm into a single system (Long, 2012). ERP is utilised by firms in efforts to coordinate information flows in their business processes. ERP effectively and efficiently aid a firm’s business processes, consisting of marketing, operation, distribution, accounting, and human resources (Long, 2012). ERP brings about more and better information that can be utilised by other firms to gain lower costs and higher efficiency (Long, 2012).

2.2.2 Reasons or benefits for Mining Industry to adopt ERP Systems

According to long (2012) there are a number of reasons for firms to implement an ERP system. Botta-Genoulaz and Millet (2006) also concurred that the motivation for firms to implement an ERP system stem from the following: Poor business performance, very high cost structure, low level of responsiveness to customers and suppliers, too complicated business processes, lack of support for establishing new business strategies and ineffective and inefficient business processes. Mining is a multifaceted business, one that in many ways parallels a repetitive manufacturing business (Leslie, 2009). In a mining company, each department has its own way of measuring outputs, which often is incompatible with legal or shareholder requirements. An enterprise resource planning (ERP) system allows each department to use its own reporting measures. The ERP software changes data into standard (legal) business reporting.

In companies where business is managed by non-ERP software such as spread sheets and unlinked software, financial integration is time-consuming and usually comes with errors. In addition, these systems do not allow an overall view of the company’s operations (Leslie, 2009). The mining enterprise is partitioned into several business areas or distinct departments which try to provide information to each other, with each business area using its own best business practices and measures.
According to Leslie (2009) when each department has its own business system, the problems come out as, multiple non-consistent product measures, lack of timely data exchange, difficulties in integrating spread sheets with computer systems, difficulties in converting information from one measure to another, problems with auditability, and inability to respond to business demands.

Leslie (2009) also suggested that there has to be some real-time system that each group uses to convert data to a standard measure so as to avoid the above problems and to be able to produce financial reports within few days. Long (2012) also concurred that an ERP system can handle these business needs. Long (2012) also noted that the main advantage of any ERP system is that it is a comprehensive, real-time system. An ERP system has all the transactions programmed to give updates in no time. Every department can make use of the company’s up-to-date data. ERP can also assist where a company operates in more than one country and where more than one currency is used. According to Long (2012), the reasons for implementing an ERP system are:

- availability of low-cost options that minimise risk
- pressure from customers or suppliers for data and collaboration
- exponential growth
- growth beyond a predefined threshold
- regulatory compliance requirements
- a disastrous event that proved an ERP is essential to operate effectively
- mandates from the parent company

Obrien (2005) noted that an increasing number of organisations are making huge investments toward ERP implementation and many of these companies fail at the implementation stage and as such they do not experience the benefits that ERP systems promises. ERP implementation failures are most often the result of business problems instead of technical difficulties (Yen, 2004). Tabataba’l (2011) concurred that failures of ERP implementation can be caused by multiple factors mostly organisational and social factors.
According to Yen, Fitzgerald & Russo (2005) studies suggest that failure is largely due to organizational and social, rather than technical factors. An enterprise system affects the strategy of an organisation as well as the organisational culture or the way business is conducted. No implementation can be successful when there is disharmony or conflict between ERP and the enterprise strategy.

Fitzgerald & Russo (2005) propose that the implementation of ERP be aligned to the strategy of the organisation. Yen (2004) also commented that it is very important that ERP implementation be fitted with competitive priorities for the organisation to succeed. According to Yen (2004) competitive priorities should be guide to direct the ERP implementation.

**2.2.3 ERP as a source for competitive advantage**

**ERP and Operations Strategy**

According to Davenport (1998) ERP should not be viewed as mere ICT software but “a way of doing business”. Davenport (1998) identified the main cause of poor ERP implementation as non-alignment of the system with the business requirements. Davenport (1998) warned that there are several ways of doing business as opposed to the assumption made by ERP that every business can suit ERP requirements. In his augment, Davenport (1998) is in favour of customisation as a way of making sure that the implementation of the ERP is suited to unique characteristics of that particular business that is adopting the system. However, customisation has its drawbacks such as increasing the cost of the project. Davenport (1998) warned that an organisation run the risk of destroying its unique competitive advantage by adopting processes that look the same to those of its competitors. The point raised by Davenport was also supported by Porter (1996) where he noted that “a company can outperform rivals only when it can establish a difference that it can preserve”. Porter (1996) encouraged organisations to work out ways of addressing and removing some rigidity in the way they do business so as to ensure that the unique characteristics of the business which give it advantage over competitors are not destroyed but maintained and enhanced. Davenport et al. (2000) emphasised the importance of integrating supply chain system
with the ERP so that the organisation realises some unique advantage that are supported by the new IT system.

**Strategic information systems alignment**
According to Abdisalam et al (2010), Strategic Information Systems Alignment (SISA) role is primarily to assist in the integration of the information system with the company or enterprise strategy. SISA helps in changing information into usable data for coordinating the workflow in the company and assist in decision making and problems solutions (Abdisalam et al, 2010). Information systems such as Enterprise Resource planning can be utilised to generate a competitive advantage on the basis of the generic strategies such as that of Hwange Colliery Company of cost leadership and market penetration and focus.

Abdisalam et al (2010), noted that there is should be some linkages between organisational business strategy, rules, and procedures and the organisation's information systems. The linkage ensures that the organisation has an ERP system that is aligned to the business objectives.

**User's Expectations and Reality of ERP System**
Adekunle Okunoye & Mark Frolick (2006) commented that during the early stages of outlining business requirements and or a business case for the justification of the investment in ERP system, users’ expectations are often very high coupled with numerous and varied perceptions about the performance of ERP. In most cases users are not aware of the long time in learning about the envisaged system and the problems that come with it.

Adekunle Okunoye & Mark Frolick (2006) established from their studies that the ERP users were surprised by the amount of changes that occur and the rise in the work load. Adekunle Okunoye & Mark Frolick (2006) cited the amount of data input that in some cases enormously increased by more than 500% due to some data conversion, entry and cleaning exercises. The findings by Adekunle Okunoye & Mark Frolick (2006) also revealed that the ERP users require a lot of and intensive training

**2.2.4ERP and value chain analysis**
The framework of this study is that enterprise resource planning (ERP) also facilitates improvement to a company's value chain, thus generating significant competitive advantage (Elloumi, 2001). ERP is the integration of a business software solution into a company's activities and strategy. The integration is designed to increase the manageability of the key processes supporting business operations and infrastructure.

Elloumi (2001) noted that the theoretical premise and motivation behind implementing an ERP project is the increased efficiency contributing to profitably, cost reduction, and customer satisfaction as well as increased efficiencies around the supply-chain and the consolidation of information. This overall business improvement creates a differentiation of cost and quality, giving those who use ERP an advantage over their competitors. Michael Porter (2001), the well-known theorist behind competitive advantage analysis, provides the framework by which ERP solutions and their success will be analysed. A company's ERP project is assessed by the level of improvement in terms of Porter's value chain in the areas of productivity and customer satisfaction.
The Principle
According to Long (2003) the model shows how the activities of an organisation can help to contribute to the value offered to customers through products and services.

Assumptions
Every function and activity, and how they interrelate, can improve an organisation’s competitive position (Long, 2003). The interrelationship between functions can be effective and efficient when an organisation uses an ERP system. HCCL has adopted an ERP system to gain competitiveness through an enhanced functional interrelationship.

Long (2003) noted the Elements of the model as:

Primary Activities

Support Activities

INBOUND LOGISTICS: Examples: Quality control; receiving; raw materials control; supply schedules

OPERATION: Examples: Manufacturing; packaging; production control; quality control; maintenance

OUTBOUND LOGISTICS: Examples: Finishing goods; order handling; dispatch; delivery; invoicing

SALES & MARKETING: Examples: Customer management; order taking; promotion; sales analysis; market research

SERVICING: Examples: Warranty; maintenance; education and training; upgrades

Figure 2.1 Value Chain Analysis Model
Adopted from Generic Value chain for Competitive advantage by Michael E. Porter, 1985
• Inbound logistics (storage, reception, internal storage)
• Operations (transforming inputs into products)
• Outbound logistics (collection, storage, distribution)
• Marketing and sales
• Service

Support activities
• Procurement
• Technology, plant and equipment
• Human resource management (recruitment, development, reward)
• Infrastructure (planning, finance, legal, management)

Value
According to Long (2003) the value chain displays total potential value which equals value activities plus profit margin.

2.2.5 ERP Critical success factors
As cited by Hedman (2010) early documentations on ERP systems were done by Davenport in 1996 who identified six critical success factors which include top management involvement and support, the utilisation of one consulting organisation, cross functional committees, cross functional implementation, fast implementation, and adequate communication to the entire organisation of ERP system implementations. Hedman (2010) further identified three factors which he noted to be “of paramount importance”. These factors include; management support, a committed project team, and companywide commitment to change.

Hedman (2010) noted organizational factors which affect implementation of ERP such as the part played by management and in particular how management manages the overall process of implementing an enterprise System. Hedman (2010) put a lot of emphasis on the part played by management support, which he said can overcome organizational resistance and encourage people to willingly take part in the project. The other key role of management that was noted by Hedman (2010) is in the allocation of resources to the project, e.g. financial and human. Enterprise resource planning projects are often complicated and require quite a number of people
from different professions and not to mention other resources, making the duties of the project manager very crucial since he or she is the one that coordinates the project which may also take years to complete (Hedman, 2010).

Kimberling (2006) also identified the following critical success factors for successful ERP implementation;

**Business processes and requirements focus**
According to Kimberling (2006) companies usually put more attention to technical capabilities or platforms that particular software supports. What is important is that the key business requirements are met and also the need to establish how the company processes should run. Kimberling (2006) emphasised that the choice of an efficient and effective ERP software can only be done after establishing the above two important requirements.

**Focus on achieving a healthy ERP ROI (Return on Investment)**
Kimberling (2006) encouraged companies implementing enterprise resource planning to also draw attention on the need to ensure that the project result in return on the capital injected even though it may be a long term achievement. He also advised on the need to also contact post-implementation performance measurement for the ERP. The requirement is that people should develop a strong and business case so as to get approval from top management and board of directors. The process also requires the establishment of key performance measures, setting of objectives and targets for the measures, and monitoring performance after go-live. This way the enterprise realises and maximise the benefits from the ERP. According to Tammy (2004) most studies have shown that the lower the time of usage of ERP the lower will be the benefits to the organisation

**Strong project management and resource commitment**
As also noted by Hedman (2010), the success of a large ERP project requires a committed and resilient project manager to work with competent team players from the company who support and participate in the project. The
the project is completed within the budgeted time and cost.

**Full commitment and support from company executives.**

Kimberling (2006) stated that projects which are not supported by the top management and board are bound to fail. Failure could result from reluctance by the top management or board to approve resources for use in the ERP projects. Funds meant for the project can be diverted to other areas if the top management is not fully supportive of the project.

**Take time to plan ahead**

The primary concern of an ERP consultant is to seal a deal as quickly as possible while that of an organisation is to make sure it gets done right. Kimberling (2006) commented that most of the time, many companies rash to undertake a project without making sure that the consultant or firm providing the services appreciate the needs of the company. Addressing problems in time or at the planning phase saves time in that very little time would be spent trying to correct things in the later stages of the project.

**Ensure adequate training and change management.**

The implementation of an ERP brings with it big changes in the way people do business, it is important that the users understand how to use the system and what is happening to their work processes. The benefits of ERP will not be realised if the people who use it do not understand how to use the system well. Kimberling (2006) advised that it is therefore crucial to spend money and time for training users and on change management courses for every ERP project.

Hedman (2010) concurred with Kimberling that it is important to make sure that all employees understand why there is need to implement ERP. Kimberling (2006) noted that it is quite visible that a number of large companies have adopted ERP, but it is difficult to think about not having ERP. The argument is that it could be possible that what that company needs could be just process improvement or a change in the organisation set up or just new and efficient equipment. A good appreciation of the requirements of the enterprise acts as
a foundation to establish as to which processes of the business require to be
done through ERP. Accordingly Kimberling (2006) encourages organisations
to look at the factors so as to ensure that the enterprise realises or recovers
the huge capital outlays invested in the ERP system.

**Enterprise Resource Planning (ERP) failures**

Enterprise Resource Planning implementation failures can be of various forms
notably, failing to use the ERP to one’s advantage, misuse of the Enterprise
Resource Planning (Tabataba’i, 2011). Tabataba’i (2011) argued that frequent
failures are caused by vendors who over promise the capabilities of the
system. Other failures arise from trying and failing to customise due to
underestimating the complexity of the Enterprise Resource Planning system.
Mehdi (2006) pointed that, ERP systems are very complex and are hard to
utilise. For ERP implementation to be successful, it should have the backing of
top management and support from everyone in the organisation.

(Ligus, 2006) noted and called the following situations Enterprise Resource
planning implementation failures; failing to generate enough revenue which is
more that the capital outlay for the project, failing to meet the implementation
date and the go-live dates, when the actual cost of the ERP project is above
the budgeted cost, stifling organisational processes or in the worst case,
stopping production and or failing to send orders to customers. Ligus (2006)
identified several causes of companies failing in the implementation of
Enterprise resource planning. These causes of failures he called them
cardinal sins, namely; little or no involvement by the leadership of the
organisation, failing to adequately plan for project requirements, failing to
select the right software which is suitable for the business. Unavailability of
resources for the project, workers refusing to leave the old way of doing
business and, failing to convince workers on the benefits of the project hence
no buy in from them. Poor budgeting of time required for the project, poor
budget of amount of effort required for the project, misalignment between the
application software with the business requirements. Mehdi (2006) concurred
that inability to establish underlying operational processes that enhance the
business performance and inability to establish flaws are the main reasons
why the majority of the ERP projects fails, poor ERP training and education on how the system works also cause project failures.

**Balanced scorecard and Business process reengineering**

According to Mehdi (2006) pressure to offer solution to the problem of failing to integrate business issues for easy assessment of the whole business performance motivated Kaplan and Norton into designing a ‘balanced scorecard’. This is a way of providing decision makers with a quick overview of the whole business. A balanced scorecard allows managers to evaluate the business from four important areas namely (Kaplan, 2010)

- Customers
- Internal Business Processes
- Financial
- Learning & Growth

**Customer perspective**

According to Kaplan (2010) managers should prioritize the way the company is performing from a customer position. The company performance is viewed through consideration of what the customers want or perceive as good service. The model requires managers to consider the four important concerns of customers namely, time of service delivery, the quality of service or product, cost of service or product and the quantity of delivery. To meet the quantity aspect managers should be able to forecast and plan productions so that they meet the demand from the various customers.

**Internal business perspective**

The internal business processes are then tailored to meet or produce a product or ensure that the service meets the requirements of customers if it is a service provider (Kaplan, 2010). There should be some key performance indicators within the organisation that are designed to produce a product that will meet the specifications from the customer who is buying the product or service or better still to surpass the customer. In short managers must concentrate on processes within the organisation which enable them to meet
or exceed customer requirements. These decisions and processes must be ERP enabled.

**Innovation and learning perspective**
According to Kaplan (2010) to survive and prosper there is need by the organisation to promote research and developments where new products or services are designed with a view to keep the business agile in a competitive environment. The leadership must ensure that there a frequent modifications to the products or services. The developed new products and services add a great deal of value to the customers. The modifications should also enhance process efficiency such that production cost is as low as possible to enable the organisation to penetrate new markets at low product or service prices.

**Financial perspective**
There should be some measurements of key financial indicators that tell managers whether their efforts are positively contributing to the business value or whether they are making a profit or not (Kaplan, 2010). Periodic and timely, ERP generated financial reports allow the managers to review performance of the business in line with the sales and market penetration efforts. The balanced scorecard provides a win-win approach, a means of simultaneously increasing satisfaction among a wide variety of organisational stakeholders, employees, customers, and stockholders. HCCL did not do any business process reengineering to be integrated with the ERP system.

**2.2.6 ERP & Balanced scorecards**
Mehdi (2006) pointed that ERP gives instant data which is accurate and free from errors for managers to quickly make decision and implement changes. This facilitates or improves the efficiency and effectiveness of customer satisfaction efforts, quality improvement, cost reduction and time of service delivery. According to Mehdi (2006) some companies have failed to realise the benefits of the ERP because they fail to align the information technology with the organisational goals and objectives. Mehdi (2006) suggested that companies implement ERP together with some reengineering or together with
balanced scorecard so that they achieve their goals of customer satisfaction, growth and good financial performance.

2.2.7 Assessing a business readiness for ERP: use of the Mckinsey 7s framework

Principle
The model shows central and interconnected factors that influence the organisation's effectiveness, especially in its ability to change (Harding, 2003).

Assumptions
According to Harding (2003) a change in one central factor can significantly affect another factor. Effective change depends on the relationship between the elements or the whole model. The role of Enterprise Resource Planning, ERP at HCCL was to integrate these elements to enhance competitiveness. It is also assumed that the extent of real change is geared to all seven elements, or factors working together.

Elements of Model

Structure
According to Harding (2003), the structure comprises the coordination of functions within the organisation and emphasis on parts which are most important to the organisation’s growth at any one time. There has to be a basic structure and responsibilities suitable for executing the chosen strategy and properly identified key tasks. For example existence of hierarchy of supervision, system of committees, project teams and task forces. At HCCL, each department had a departmental champion who represented the department throughout the planning and implementation of ERP modules.

Strategy
This is an organised-planned course of action to enable the organisation achieve its goals such as customers satisfaction, market penetration and subdue competition (Harding, 2003). The model or framework seeks to verify existence of an appropriate, working strategy internally and consistent with the environment and available resources. There has to be an acceptable time horizon for the strategy.
Systems
Harding (2003) defined systems as the formal and informal procedures that enable the organisation to operate. The information systems for example ERP should be adequate for coordinating functions, supervisory tasks, and feedback on adequacy of strategy. Management control systems should assure effective accomplishment of the strategy in an efficient manner. Processes for evaluating qualitative and quantitative performance should be visible.

Staff/resources
These are the resources that can be developed and managed effectively (Harding, 2003). Individuals should be assigned to essential tasks in accordance with the knowledge and skills they possess or can develop. The capital structure should be appropriate that is equity, long term or short-term debt and working capital should be well managed that is inventory, debtors, creditors. HCCL has an ICT department which is headed by an executive as shown on the organogram. The department is manned by four IT specialists and eight technicians.

Skills/quality
Skills comprise the dominating attributes or capabilities of the organisation (Harding, 2003). There should be provision for the continuing development of requisite technical and managerial skills by means of a soundly conceived and effectively administered programme for example on the job, formal instruction and study.

Style
Style is the dominant pattern of action, including symbolic behaviour by managers within the organisation (Harding, 2003). There should be adequate leadership for the task of successfully formulating and implementing strategy or plan. The organisational climate should be conducive to successful
accomplishment strategic purpose i.e. there should be commitment to chosen
strategy, motivation for accomplishment, encouragement of cooperation,
development of individual competence.

Superordinate goals/shared values/stakeholders
These goals are the set of values or aspirations which act as the guiding
concepts, giving stability and meaning to staff or stakeholders. Stakeholder is
anyone concerned about whether the organisation continues to exist and
includes owners, stockholders, and suppliers, board of directors, community,
employees, and customers/clients.

2.3 Chapter Summary
The chapter discussed the existing knowledge on ERP implementation,
benefits and success factors, causes of failures and tools to assess readiness
for ERP implementation. The benefits of tying in balance score card with ERP
for the project are examined.
CHAPTER THREE

3.0 Research Methodology

3.1 Introduction

The chapter discusses the adopted approach to research process, methods, procedures and the framework within which the research was carried out. The chapter also details the method and tools employed in collecting data and information for use in the study. The chapter also discusses the selected methods and procedures and justification for their selection. The research was about the case of ERP implementation at Hwange Colliery Company. The research focused on Hwange Colliery Company limited ERP project, whose implementation was geared to generate competitive advantage to the business.

Definition of methodology; Methodology is a term that describes the overall approach to the research process. Webster (1985) defined research as an exhaustive investigation or a study. Woodside (2010) defined a research as an investigation that has the objective of uncovering the truths, explaining of facts and updating of established theories.

3.2 Research Design

Saunders et al (2000) noted that a research design encompasses the methodology and procedure employed to conduct a research. The design can broadly be classified based on the purpose for example

- The generation of primary data through surveying, experimentation, or carrying out case studies.
- Ways and reasons for analysing data such as historical studies, secondary data analysis and regression analysis.

Research design is about how to select the people or things so that one gets valid and reliable information or data. Research design is also about how to ask in such a manner that the data will be representative.
Saunders et al (2000) suggested a number of ways to carrying out a research namely; surveying, case studies, cross-sectional and longitudinal studies, exploratory and descriptive studies. Cross-sectional is a methodology designed to obtain information on variables in different contexts but at the same time, while longitudinal is a study over time of a variable or group of subjects. The aim is objective is to understand the issue in different times. This is done by investigating parameters over a period of time or the scope of the study.

3.3 Research Philosophy.
Saunders, Lewis and Thornhill, 2009 commented that a philosophy relates to the growth of knowledge and the type of that knowledge.

‘Philosophy is an over-arching term relating to the development of knowledge and the nature of that knowledge’

A philosophy has some assumptions on the way people see the world (Saunders at al, 2009). Flowers (2009) defined a research philosophy as a belief on the way in which data on phenomenon has to collected or gathered, analysed and used. The term epistemology means what is known to be true as opposed to doxology which means what is believed to be true constitutes the various philosophies of research approach. Flowers (2009) argued that it is vital to take into account the various research paradigms and issues of ontology and epistemology since these issues touch on perceptions, beliefs of the researcher versus the reality of the matter on the ground. These issues determine or influence the route that the researcher takes in his study.
Three major ways of thinking about research philosophy are epistemology, Ontology – objectivism and subjectivism and axiology.

Epistemology
It encompasses acceptable knowledge in the area of study. Saunders at al (2009) noted that the aspects of philosophy includes, positivism also known as the stance of the natural scientist, Realism - direct and critical realism,
Interpretivism – researchers as ‘social actors’, and finally axiology which studies judgements about value

**Ontology** borders on the nature of reality. This raise questions on the assumptions researchers have on the way the world works as well as the commitments that are held to particular views. One of the aspects of ontology is objectivism which portrays the position that social entities exist in reality external to social actors who are concerned with their existence (Saunders et al, 2009). The other aspect is subjectivism which states that social phenomena are created in the mind and are a consequent of actions of those social actors concerned with their existence (Saunders et al, 2009).

Two major research philosophies have been identified as positivist (sometimes called scientific) and interpretivist (also known as ant positivist) (Galliers, 1991).

**Interpretivism**
This philosophy emphasises on the differences between conducting research within the people as opposed to items such as trucks and computers (Saunders et al, 2009).
Saunders, Lewis and Thornhill (2003) suggest that a research should be developed from top down, starting with the adoption of a research philosophy and thereafter selection of data collection methods. Creswell (1999) noted three research philosophies and defined them as positivist (quantitative), interpretive (qualitative) and realist. The positivist research is defined as “any kind of research that produces findings not arrived by means of statistical procedures or other means of quantification” (Woodside 2010). The difference between qualitative research and quantitative research is that data is usually gathered using less structured research instruments is more flexible and allows one to go deeper into the subject.

**Realism,**
According to Saunders (2009) realism is a philosophical position about an enquiry which argues that what the senses tell us as reality is the truth and that objects exist independently of what our senses tell us. In this sense,
realism is opposed to idealism, the theory that only the mind and its contents exist (Saunders, Lewis and Thornhill, 2003)

**Qualitative versus quantitative approach**

According to Lundahl and Skärvad (1999), qualitative methodology looks at interpretation and understanding. The qualitative methodology is therefore appropriate when the aim is to describe, analyse and understand the behaviour of individuals. Sometimes researchers prefer to carry out an in-depth investigation utilising a smaller number of subjects so as to have more detail about the issue at hand. Kaplan and Maxwell (1994) noted that interpretive research define how the situation emerges. Realism believes in the reality of the situation and is independent of one’s thinking. In critical realism research, the main task is social critique where the restrictive and alienating conditions are brought to light. ICT research has been dominated by positivistic and scientific methods. Positivism as research process involves the researcher assuming the role of an objective analyst. Saunders et al (2000) emphasizes on the use of structured methods so as to facilitate replication and ability to quantify the observations to enable the use of statistical analysis. According to Johnson (1997) a research is independent of the subjects and does not affect the items being researched. The choice of positivism approach is greatly influenced by the fact that there are aspects of ICT and in this case ERP, which impact on competitiveness and critical success factors on ERP implementation. The task of positivist researcher is to find recurring patterns of association between selected facts.

**Ethnography**

Ethnography refers to field research. The ethnographic method calls for observation and note taking. Ethnography requires that things left in their natural state, whilst observing behaviour and recording. The researcher is invisible and watching without being noticed. Neuman and Wiegand (2000) gave some useful guidelines for the field research, which include quick note taking, recording of sequence of events and avoiding judgements. This research approach was not used in this study.
Action research
Action research is mostly used in sociology, psychology and organizational studies. Hardman (2002) commented that action research is educating, involves the researcher as part of the group. The research focuses on a particular problem and the future. The research also encompasses repetitive process in which research action and evaluation are interlinked with the objective of improvement and involvement. This involves capturing everything of importance as accurately and as comprehensively as possible.
According to Lucey (1995), action research also involves reflecting stage were the participants get together to work out what they have learned from the process. Participants look at the evidence collected from as many perspectives as possible and compare against the theoretical frameworks built at the start of the research. The thrust is to have a deep understanding of the subjects through the process and also contribution to future action through the process of involvement. The difficulty associated with this method is that like experimental research, the method does not allow to make simulation that matches the reality of events. Action research was not used in this study.

Case Study
A case study is used for more in-depth analysis of unique and notable cases. The case study research was used in this research so as to have an in-depth analysis of ERP implementation in HCCL. The reason for choosing the case study approach is that the approach and results obtained are peculiar for HCCL and would be used in generating competitive advantage to the business.
According to (Carlson, 1992) qualitative techniques are usually employed in case studies especially for gathering data in ICT related researches. The quantitative data was gathered, analysed and presented to enable most accurate interpretation.
In summary, both quantitative and qualitative approaches to research are used. The use of both approaches is critical in literature review and data analysis as recommended by Saunders (2000). Saunders (2000) commented that the quantitative and Qualitative approaches though mutually exclusive complement each other and can be utilized in conjunction where appropriate.
3.4 Research strategy
For this study, the researcher used both quantitative and qualitative methods of research. The research questions had certain areas that were investigated through quantitative approach hence this numerical nature calls for a quantitative approach, such as return on investment and the percentage of people agreeing or disagree on the benefits of ERP. The other areas were descriptive in nature and thus require qualitative approach as the perception that management is not supportive of ERP implementation.

3.5 Population and Sampling Technique
Smith (1995) defines the population as the group of interest to the researcher. (Fraenkel and Wallen, 1996) commented that the results of study are generalized upon this group. The population is the totality of all the elements that the researcher is interested. The researcher obtains information and makes inferences on the group using the sample. Target population comprises of the specific elements relevant to the research project. In this study of HCCL ERP project, the employees who use ERP were the target group. The population for this study is composed of employees (non-managerial, Middle management and executive management) of HCCL. The Participants include top HCCL management or executives, medium level management and non-management employees. 65 HCCL people drawn from executives, middle management and non-managerial were sampled for the study. The following table shows the sample distribution on the population.

Table 3.1 Sample distribution on target population

<table>
<thead>
<tr>
<th>Target Population</th>
<th>Percent of population</th>
<th>Sample</th>
<th>Percent of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Executive</td>
<td>12.0</td>
<td>6.0</td>
<td>9.20</td>
</tr>
<tr>
<td>Middle management</td>
<td>26.0</td>
<td>12.0</td>
<td>18.5</td>
</tr>
<tr>
<td>non-managerial</td>
<td>108.0</td>
<td>47.0</td>
<td>72.3</td>
</tr>
</tbody>
</table>
The sample is 44.5% of the target population

Key
Executives  -level 3H and above, directors, General Managers and Heads of departments
Middle Managers  -level 2H to 3L managers who are senior managers and heads of section.
Non-Managerial-Level 1 and below, non-managerial staff from various disciplines.

Sampling Technique
Curtis et al (2000), citing Miles and Huberman (1994) gave the different attributes on assessment of sampling technique as outlined below:

- The sampling technique has to be relevant to research questions.
- The sample must be able to generate relevant information on the problem under study.
- The sample has to improve the generalizability of the results.
- The sample has to generate believable descriptions and explanations
- The sample strategy should be ethical
- The sampling plan should be feasible

Sampling allows the researcher to draw conclusions on the entire population (Cooper & Schidler, 2001). Curtis 2000 also emphasised the need to define a sampling frame, which is a list of elements from which the sample maybe drawn.

Methods of Sampling
There are two ways of sampling namely random or probability and non-random or non-probability sampling. The random sampling method ensures that the probability of picking an element in the group is the same. Each element being selected from the population has equal chance of selection with all elements (Saunders et al, 1997). Non-random sampling is such that
the probability of each element being picked from the total population is uncertain.

**Probability Sampling**

This is a sampling method where every element in population has a known probability of being picked, for examplesimple random samplingwhere each member of the population has an equal opportunity of being selected;

- **Simple Random Sampling**: is a way of sampling where there is an equal chance of being selected among the members or elements. This provides an equal chance of each member for inclusion in the select group.

- **Systematic Sampling**: Is procedure which involves the selection of a starting point by random sampling and then every $k^{th}$ number on the list is picked for inclusion in the sample (Marsh, 1992). Once the first selection is done, the method results in a few being selected while most members are excluded.

- **Stratified Sampling**: Is a sampling technique in which subsamples are picked from samples within different groups that share the same attributes. Random sampling is used to select an element within strata. The method gives a more efficient sample than could be taken on the basis of simple random sampling.

- **Cluster Sampling**: This is the classification of the population into distinct clusters where each cluster has members with different characteristics. The method mostly suitable when a population is large and geographically dispersed.

**Non-Probability Sampling**

The probability of selecting a member of the group is unknown. This makes it difficult to project the data beyond the sample. Some of the methods used include;

- **Quota Sampling**: A non-probability sampling method that ensures that some attributes of a population sample are represented as per the researcher’s judgement. This ensures adequate representation of
various elements of a population relative to proportions, which occur in the population (Turner and Martin, 1996).

- Convenience Sampling: This type of sampling refers to the method of selecting members who are conveniently available (De Vaus, 1990). The method is prone to bias and results in a non-representative sample.

- Purposive Sampling: A non-probability sampling technique where a specialist or experienced researcher selects the sample based upon knowledge of attributes of the members. The sampling technique is based on the researchers’ judgment or interest (Moser and Kalton, 2001). The researcher selects a sample to serve a specific purpose such as satisfying the needs of the project especially in case studies.

The chosen Methods
The researcher used the Cluster sampling in conjunction with the Purposive sampling. The Cluster sampling was used because of the geographical set up of HCCL operations, with operations in Harare, Bulawayo and Hwange. The researcher sought to the best ability to have a representative sample drawn from the three groups across the geographical disperse. The main criteria used being;

- Involvement in the strategic planning and control
- Involvement in Ellipse implementation
- Active user of the ERP system and reports generated.

The clusters represent or show the structure of the population as depicted on the HCCL organizational structure. The subject under discussion is a case study of HCCL which had sub-population with heterogeneous characteristics and different interest, thus requiring both purposive and cluster sampling.

Table 3.2 Cluster Sample Analysis by Location

<table>
<thead>
<tr>
<th>Organisational Level</th>
<th>Hwange</th>
<th>Bulawayo</th>
<th>Harare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executives</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Middle Managers</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
3.6 Data Collection Methods

The various ways that are at the researcher’s disposal for gathering of information for a study includes: screening of past records and reports, face to face interviews, telephonic interviews, and questionnaires. The selected method depends heavily on the research questions for the study. The main aim of data collection technique is to collect reliable information for use to address the research questions. Saunders et al (2000) noted the following sources of data which can be used for case studies notably; documented information, information archived, information collected from interviews, direct observation of the events, participating and observation. Observations by Boyer et al (2002) show that surveys through internet results in fewer responses compared to using printed questionnaires. However Boyer et al. (2002) noted that the two methods can be used in the same study, especially where distance matters.

Types of Data

Data is grouped into primary or secondary data (Wegner 1995). Primary data as one that is used for the specific purpose for which it is collected and secondary data as one that is collected and processed for other purposes other than the problem at hand(Wegner, 1995). According to Wegner (1995), sources of data can be from internal or external sources. Internal source is data which can be obtained from within the organization such as financial statements, production reports, board reports, Ellipse project minutes & documents. External data is that data which is available for other purposes and is obtained from outside the organization, for example statistical agencies, reports from Mincom Clients covering implementation process, and ERP software websites.

<table>
<thead>
<tr>
<th>Non-Managerial</th>
<th>35</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>51</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>% Total Sample</td>
<td>78.4%</td>
<td>9.2%</td>
<td>12.3%</td>
</tr>
</tbody>
</table>
According to Wegner (1995) primary data can also afford the researcher greater control of its accuracy as compared to secondary sources. This research used questionnaires, interviews for collection of primary data. The researcher used secondary data in order to gather benefits of ERP software related matters impacting on the organization’s competitiveness. Textbooks, monthly management and annual financial reports and Internet materials were the secondary sources used in this research. Secondary data used includes strategic planning documents, management accounts and other operational reports made available to the researcher.

**Questionnaires**

Wegner (1995) define a questionnaire as a group or sequence of questions designed to elicit information upon a subject. According to kelvin (1999), a questionnaire is a data collection tool used in survey research where respondents address questions by recording their own answers. Saunders et al (2003) point out that a questionnaire should precisely address research questions and objectives. According to Wegner (1995), a questionnaire is useful in a structural data collection process and when factual information is required. A questionnaire was used to gather information used in this research so as to enable the researcher to address the research questions.

The distribution of the questionnaire was done on face to face and using emails for areas outside Hwange such as Harare and Bulawayo. emails involve sending the questionnaire to people so that they can respond and send back completed questionnaires.

The main disadvantage of using questionnaires as noted by Wegner (1995) include low return rate as some respondents fail to complete and return the questionnaires. The other disadvantage arises from lack of control of the person filling the questionnaire. There are instances where respondents may require clarification. Saunders et al (2003) also noted that respondents may feel unsecure to provide sensitive and confidential information to someone. Most respondents in Hwangewere covered on face to face specially the executives and middle management. The respondents who were based in Harare and Bulawayowere covered through emails.
Questionnaire Structure
According to Foddy (2006), the design of each questionnaire includes three sections namely, administrative, demographic and information sections. The administrative section is used to record the respondent`s identity by company or business unit. The demographic section consists of the respondent`s description using demographic data such as age, qualification, job category and title. The questionnaire included a combination of open ended and close ended questions to allow respondent to answer in their own way (Wegner, 1995). Closed questions were used to direct the respondent to answer questions that would answer the research objectives. These questions are quicker and easier to answer.

Research Interviews
According to Saunders et al(2003) an interview is a discussion between people or among a group of people. Interviews can be formalized and structured, using standardized questions or they may be formal and unstructured conversations (Saunders et al, 2003). Structured interviews use questionnaires based on predetermined and standardized questions. Structured and standardized interviews can be used in survey research to gather data, which will then be subjected to quantitative analysis. Saunders et al (2003) suggest that for semi-structured interviews, the researcher should have questions to be covered, although these may vary from interview to interview. The order of the questions may also vary to suit the flow or as the interviewer sees it fit to do so. Additional questions may be required to explore the research questions and objectives (Saunders et al, 2003). Unstructured interviews are informal and are used to explore in depth, an area in which the researcher has interest. There are no predetermined questions, although the researcher should have a clear idea of the aspects to be explored (Saunders et al, 2003). Semi-structured and unstructured interviews are utilised in qualitative studies so as to understand how and why events were like what they were (Saunders et al, 2003).
In this study, semi-structured and in-depth interviews were used because they provide the researcher with the opportunity to probe answers, where explanations were required, as well as build on the responses given. This adds significance and depth to the data obtained. Saunders et al (2003) suggest that probing may lead the discussion into areas that, hitherto, had not been considered but which are significant in aiding understanding and help address the research questions and objectives. Personal interviews, where appropriate also achieve a higher response rate than using questionnaires (Saunders et al, 2003).

3.7 Research procedure
3.7.1 Pilot Testing of the Questionnaire
Saunders et al (2003) suggest that prior to using a questionnaire to collect data, a pilot test must be done in order to refine the questionnaire and ensure that respondents will have no problem in answering the questions. A pilot testing was conducted and was used to assess the validity of the questions and the likely reliability of the data to be collected. Ten questionnaires were distributed as follows, two to executives, three to middle managers, and five non-managers. Completed questionnaires were checked to ensure that the respondents had no problems understanding or answering the questions. The aim of conducting a pilot test is to assess suitability the questionnaires, assess data collection methods and analysis process. The feedbacks from the respondents were used to refine the questionnaire and assess problem areas. After some corrections on the questionnaires, corrected copies were distributed to the target population for completion. The completed questionnaires were collected for data analysis.

3.7.2 Interviews
The researcher used semi-structure and in-depth interviews methods in order to minimize the effect of disadvantages associated with questionnaires. In-depth interviews were held with top management. The Managing director, the General Manager and the ICT executive were interviewed so as to have an in-depth understanding of issues pertaining to ERP implementation.
3.7.3 Data Analysis and Presentation
The collected data gathered through qualitative & quantitative methods from the questionnaires and interviews was organized, manipulated, analysed and interpreted. Tasks involved after data collection was the preparation of data, which involved editing, coding, and entering raw data into an appropriate form for analysis. Data preparation is essential part of research, as the conversion of data into meaningful information should be done carefully to avoid loss of data incorrect coding/categorisation, which can result in wrong conclusion. The information has been presented in tables and graphical formats.

3.8 Research Limitations
Some selected employees especially at low level were not at liberty to disclose confidential information despite the assurance from the researcher, as this is against the policy and procedures whose penalties for breach are heavy.

3.9 Chapter Summary
This chapter outlines data collection, analysis and the presentation. The choice of the research methodology has been clarified and justified under each of the foregoing sections. An interpretivism philosophy to research was adopted for this study, hence a qualitative research. Related issues such as population of study, sampling methods and limitations of the study have been highlighted.
CHAPTER FOUR

4.0 Study Results and Discussions

4.1 Chapter Introduction
This chapter addresses the findings of the study and how they relate to the objectives of the study. The Chapter also discusses findings on HCCL ERP implementation and how they relate to the literature review so as to enable the researcher to identify management issues that can be improved on. A PAID approach is used, that is Presentation, Analysis, interpretation and Discussion. Statistical techniques are used to analyse the data. A combination of SPSS and excel were used to analyse and present data into, tables, pie charts, and bar graphs to enable easy interpretation of the results.

4.2 Response rate
A total of 70 questionnaires were sent to the target group of people and 49 of the questionnaires were returned, giving an overall response of 70%. The table below shows the distribution of the respondent according to his or her level in the organisation. The response rate was high and was more than 50% of circulated questionnaires. The proportion of those who responded was large enough to allow the drawing of conclusion.

4.2.1 Respondents by level
Table 4.1 Respondents analysis by level
<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>% Cum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Executive</td>
<td>5.0</td>
<td>10.20</td>
<td>10.20</td>
<td>10.20</td>
</tr>
<tr>
<td>Middle management</td>
<td>9.0</td>
<td>18.37</td>
<td>18.37</td>
<td>28.5</td>
</tr>
<tr>
<td>non-managerial</td>
<td>35.0</td>
<td>71.43</td>
<td>71.43</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>49.0</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.1 Percentage of respondents by levels

**Data Analysis**

The Chart shows that 71.4% of those who responded were non-managerial, 18.4% were middle managers and 10.2% were executive managers.

**Discussion**

Each level in the organisation was represented. This ensures total representation of the HCCL workforce that uses ERP across the spectrum, from executive level to the shop floor personnel. TKM1 (2010) put the number of ERP users for HCCL at 100. The number of people who use the system increases as you go down the levels hence there were more respondents
down the levels. The respond rate was high enough to allow drawing of conclusion.

4.3 HCCL Capability for ERP Implementation

Table 4.2 HCCL Capability for ERP Implementation

<table>
<thead>
<tr>
<th>HCCL Capability For ERP Implementation</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>% cum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>4</td>
<td>8.16</td>
<td>8.16</td>
<td>8.16</td>
</tr>
<tr>
<td>Agree</td>
<td>28</td>
<td>57.14</td>
<td>57.14</td>
<td>65.3</td>
</tr>
<tr>
<td>Uncertain</td>
<td>7</td>
<td>14.29</td>
<td>14.29</td>
<td>79.59</td>
</tr>
<tr>
<td>Disagree</td>
<td>8</td>
<td>16.33</td>
<td>16.33</td>
<td>95.92</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2</td>
<td>4.08</td>
<td>4.08</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Data Analysis

Of those HCCL employees who responded, a sum total of 65.3% agree (i.e. those who strongly agree and those who agree) that HCCL has the capacity to implement ERP successfully and only 20.4% disagree and feel that HCCL has no capacity for ERP implementation. 14.3% of respondents were uncertain.

4.3.1 HCCL infrastructure for ERP implementation
A total of 53.06% of the respondents agree that the infrastructure support for HCCL is adequate for ERP implementation. A deliberate effort was made prior to ERP implementation to assess the infrastructure and recapitalise on areas where it was felt that the infrastructure would not cope with the requirements of the new system. This could be the reason why the majority of respondents agree that HCCL has the capacity to implement ERP.

**Discussion**

Failing to adequately plan for project requirements is one of the reasons why ERP projects fail (Mehdi, 2006). HCCL changed computers and upgraded the infrastructure before implementation of ERP so as to avoid this pitfall.
Table 4.3 Cross tabulation of Respondent level and infrastructure support

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Infrastructure support</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Uncertain</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Executive</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>20</td>
<td>40</td>
<td>20</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Middle Manager</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>11</td>
<td>44</td>
<td>11</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Non Managerial</td>
<td>6</td>
<td>12</td>
<td>2</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>18</td>
<td>36</td>
<td>6</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>18</td>
<td>4</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>17</td>
<td>38</td>
<td>9</td>
<td>23</td>
<td>13</td>
</tr>
</tbody>
</table>

Of all the executives who responded, 60% agree that HCCL has the infrastructure support for successful ERP implementation, 20% of the executives were uncertain and 20% disagreed. For middle managers who responded, 55% also agrees that HCCL has infrastructure to support ERP implementation. For non-managerial 54% of those who responded also agreed that the infrastructure was adequate for ERP implementation. The percentage of those who agreed that the infrastructure is adequate to support ERP implementation is more that 50% across all levels. The proportion of people who said no is fairly high at lower levels, this could be a sign of ignorance of ERP requirements at lower levels in the organogram. Prior to the study, a survey of the infrastructure requirements was done and new computers and servers were installed to match the ERP requirements. This could have an influence on the results otherwise had the study been done before procurement of these machines, the results could be different. This suggests that the infrastructure was adequate for the new system.

Table 4.4 below shows a cross tabulation of respondents and HCCL capacity for ERP implementation which was done so as to determine if the feeling that HCCL has the capacity to implement ERP was the same across all levels. The results show that all executivemanagers who responded, agree that
HCCL has the capacity for ERP implementation, however there is a general decline on lower levels who share the same sentiments to 78% and 57% for middle managers and non-managerial respectively.

**Table 4.4 Respondent level*HCCL Capacity cross tabulation**

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Capability</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td>Count</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>40</td>
<td>60</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Middle management</td>
<td>Count</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>22</td>
<td>56</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>non managerial</td>
<td>Count</td>
<td>0</td>
<td>20</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>0</td>
<td>57</td>
<td>17</td>
<td>20</td>
<td>6</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>4</td>
<td>28</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>49</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>8</td>
<td>57</td>
<td>14</td>
<td>16</td>
<td>4</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

11% of middle managers and a total of 26% of non-managerial who responded disagree with the notion that Hwange colliery has the capacity to handle requirements of ERP as illustrated on table 4.3 above.

**Discussion**

The capacity for HCCL to implement ERP was rated high. This is because the capacity was enhanced following the initial planning study carried out at HCCL in September 2010 by the team and taking corrective action prior to conducting the research. The action plan taken includes; buying of new computers with more capacity and compatible to the ERP requirements. The decline in the percentage of those who agree that HCCL has capacity as one goes down levels could be attributed to lack of total appreciation of the requirements of the system by low levels since the consultant interacted and trained most management staff and few key low level employees who use ERP on day to day duties were formally trained. According to TKMU1(2010), the skills set for HCCL for the ERP project is largely non-existents sine most of the ICT stuff had no experience with the new software and hardware.
4.4 ERP implementation is Strategy Supportive

A total of 59.2% of respondents agree (those who strongly agree and those who agree) that the ERP being implemented at HCCL is strategy supportive, however 22.5% of the respondents disagree (those who strongly disagree and those who disagree). The balance of 18.37% was uncertain.

Fig 4.3 Respondents on ERP Strategy support

Table 4.5 cross tabulation of respondent level and ERP strategy support
Table 4.5 shows that of those who agree that the ERP is strategy supportive are 80% of executive managers who responded, 67% of middle managers who responded and 55% of non-managerial employees who responded.

4.5 Level of ERP Utilisation at Hwange Colliery

Table 4.6 Time of ERP usage in relation to the Job

<table>
<thead>
<tr>
<th>% time of ERP use</th>
<th>Respondents</th>
<th>Percent respondents</th>
<th>Valid Percent</th>
<th>% cum of resp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid 0-20</td>
<td>15</td>
<td>30.61</td>
<td>30.61</td>
<td>30.61</td>
</tr>
<tr>
<td>20-40</td>
<td>11</td>
<td>22.45</td>
<td>22.45</td>
<td>53.06</td>
</tr>
<tr>
<td>40-60</td>
<td>7</td>
<td>14.29</td>
<td>14.29</td>
<td>67.35</td>
</tr>
<tr>
<td>60-80</td>
<td>9</td>
<td>18.37</td>
<td>18.37</td>
<td>85.72</td>
</tr>
<tr>
<td>80-100</td>
<td>7</td>
<td>14.29</td>
<td>14.29</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.6 shows that cumulatively 53.06% of the sampled population use ERP less that 40% of their time on their jobs and only 14.29% of the people use ERP for more than 80% of their time on their jobs.
Discussion.
According to Tammy (2004), low ERP utilisation will result in the organisation failing to be competitive. The results show that there is low utilisation of ERP; this also means that HCCL is not fully benefiting from the ERP system and may not realise the agility and competitive age that it is seeking through ERP.

Table 4.7 cross tabulation of responant level and time of ERP usage on the job.
Table 4.7 shows that 80% of respondents in the executive level use ERP for at least 40% in their jobs. For Middle managers, only 22% use ERP in their jobs. The figure is also comparable to that of non-managerial which shows that only 23% of non-managerial respondents use ERP for more than 40% of their work. Executives make use of ERP more than the other groups because they use more information generated through ERP to make management decisions. Non-managerial employees who make use of ERP are clerks and secretaries for heads of sections who raise orders to them to authorise.

**Discussion**

There is low time of use for ERP in the respondents’ jobs, this shows that there is low utilisation of ERP at HCCL. According to Tammy (2004) most studies have shown that the lower the time of usage of ERP the lower will be the benefits to the organisation. The level of utilisation of ERP has a bearing on the quality of reports being generated since most of the reports are still being generated using the old excel spread sheets. Management decisions are made from excel reports prone to errors time for reporting is not real time on some areas.

**4.6 Evaluation of Current ERP performance against expectations.**

Table 4.8 ERP performance
4.6.1 Fast and accurate reporting

<table>
<thead>
<tr>
<th>Evaluation of current ERP benefits</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast and accurate Reporting</td>
<td>26.53</td>
<td>38.78</td>
<td>22.45</td>
<td>10.20</td>
<td>2.04</td>
</tr>
<tr>
<td>Improved Cost control</td>
<td>20.4</td>
<td>42.9</td>
<td>14.3</td>
<td>18.4</td>
<td>4.1</td>
</tr>
<tr>
<td>Reduction in Stock holding</td>
<td>4.08</td>
<td>42.86</td>
<td>22.45</td>
<td>20.41</td>
<td>10.20</td>
</tr>
<tr>
<td>Reduction in Emergency purchases</td>
<td>4.08</td>
<td>42.86</td>
<td>22.45</td>
<td>20.41</td>
<td>10.20</td>
</tr>
<tr>
<td>Improved Planned Maintenance</td>
<td>8.16</td>
<td>42.86</td>
<td>28.57</td>
<td>18.37</td>
<td>2.04</td>
</tr>
<tr>
<td>Improved Information Access</td>
<td>24.49</td>
<td>57.14</td>
<td>6.12</td>
<td>8.16</td>
<td>4.08</td>
</tr>
<tr>
<td>Better Operational Planning</td>
<td>6.12</td>
<td>53.06</td>
<td>20.41</td>
<td>18.37</td>
<td>2.04</td>
</tr>
</tbody>
</table>

The figure shows that a total of 65.31% (those who strongly and those who agree) agree that ERP has improved the time and accuracy of reporting in the organisation and only 12.24% disagree (those who strongly disagree and those who disagree). The balance of 22.45% is from those who were uncertain.

Discussion
The large proportion of people in HCCI concurs with Long (2012) who noted that the main advantage of any ERP system is that it is a comprehensive, real-time system. Long (2012) stated that an ERP system has all the transactions programmed to give updates in no time.

### Table 4.9 Cross tabulation of respondent level and quality of reporting

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Reporting</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Uncertain</td>
<td>Disagree</td>
<td>Strongly disagree</td>
<td></td>
</tr>
<tr>
<td>Executives</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>60</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Middle management</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>22</td>
<td>33</td>
<td>33</td>
<td>11</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Non managerial</td>
<td>8</td>
<td>14</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>23</td>
<td>40</td>
<td>23</td>
<td>11</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>19</td>
<td>11</td>
<td>5</td>
<td>1</td>
<td>49</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>27</td>
<td>39</td>
<td>22</td>
<td>10</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.9 shows that 100% of executive, 55% of middle managers and 63% of non-managerial staff agree that there has been fast and accurate reporting since the inception of ERP.

### Discussion

The results show that there is some improvement on time and quality of reporting. According to Porter (2001) the quality of reporting and improvement in time gives tremendous leverage to the competitiveness of an organisation since this ensures that information for decision making is quickly availed.

#### 4.6.2 Cost Control improvement

Figure 4.6 shows that a total of 63.30% of the HCCL workers who responded agree that ERP has resulted in improved cost control. However, 22.5% disagree that there was an improvement in cost control.
Table 4.10 Cross tabulation of respondent level and cost control

Table 4.10 shows that 100% of executives who responded agree that ERP resulted in improved cost control. 67% of middle managers who responded also agree that there was cost control improvement and 63% of non-managerial also agree.

Discussion

Long (2012) pointed that the motivation for firms to implement an ERP system stem from the following the need to control cost which would be very high. An improvement in cost control will assist HCCL to produce at a low cost and
would therefore be able to sale products at a competitive price and enable the organisation to pursue its strategy of low cost leadership.

### 4.6.3 Reduction in Stockholding

Figure 4.7 shows that a total of 46.94% of respondents agree that there is reduction in stockholding. 30.61% disagreed while 22.25% were uncertain.

![ERP Reduced stockholding](image)

**Figure 4.7 ERP and reduction in stockholding**

**Discussion**

According to Porter (2001) high stockholding increases cost to the business. There has been a reduction in stockholding at HCCL which can be a positive sign and an encouragement to ERP for ERP further implementation. The reduction in stockholding can not be caused by a single factor as it was revealed during interview that failure to procure spares in time, as a result of poor cash flow, not necessarily the result of an inefficient ERP system also contributed to low stockholding. An interview with the store personnel revealed that the stock holding for some spares has not improved since dollarization. There is need to restock first for HCCL to realise ERP benefits in this regard.
Table 4.11 Cross tabulation of respondent level and stockholding

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Stock holding</th>
<th>Count</th>
<th>% within Respondent Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Executive</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Middle management</td>
<td>0</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>44</td>
<td>33</td>
</tr>
<tr>
<td>non managerial</td>
<td>2</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>40</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>43</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 4.11 shows that 60% of executives who participated in the study agree that there was reduction in stockholding; only 44% of middle managers who responded share the same opinion as that of executive managers. For non-managerial, the figure of respondents who agree that there was reduction in stockholding is 46% of those who responded.

4.6.4 Reduction in emergence purchases

Figure 4.8 shows that of all the people who responded, only 36.73% of the people who were studied at HCCL agree that there was a reduction in emergency purchases. There has not been a significant change in emergency purchases due to unavailability of stock items in the stores or warehouses; this explains why reduction in stockholding has been low, and not necessarily inefficient ERP system.
The table show that only 40% of executive respondents, 33% of middle managers and 12% of non-managerial agree that there has been a reduction in emergency purchases. Actually 60% of executive, 55% of middle managers and 47% of non-managerial respondents disagree that emergence purchase has been reduced.
Results show that there are still some emergence purchases despite adoption of ERP. This contrast with Porter (2001) who postulated that adoption of ERP results in reduced emergence purchases. An interview with the executives and stores personnel revealed that emergency buying is necessitated by low stocks of spares due to cash flow challenges to maintain minimum stockholding for stock items.

4.6.5 ERP and Improved planned maintenance
A total of 51.02% of the people who responded to the questionnaires, agree that there was an improvement in planned Maintenance.

![ERP improved Planned Maintenance](image)

Figure 4.9 ERP and improvement in planned maintenance.
Table 4.13 Respondent level and planned maintenance cross tabulation

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Planned Maintenance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td>Executive</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Middle management</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>Non managerial</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>11</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>8</td>
<td>43</td>
</tr>
</tbody>
</table>

Table 4.13 shows that 40% of executives, 33% of middle managers and 57% of non-managerial employees agree that there was an improvement in planned maintenance.

4.6.6 ERP and Improvement in information access

Figure 4.10 showed that 81.63%, of respondents agree that there was improvement in information access.

![ERP improved Information access](image)

Figure 4.10 improved information access.
Table 4.14 shows that all executives who responded agree that there was an improvement in information access as a result of the implementation of the ERP system. For middle managers, those who agree that there was an improvement to information access were 77% of those who responded, while for non-managerial 80% of the respondents agree with the notion that there was an improvement in accessing information. The results show that improvement in information access was across all levels.

4.6.7 Better operational planning
The figure 4.11 below shows that a total of 59.18% of respondents agree that there has been some improvement in operational planning which has been enhanced by ERP.
A cross tabulation of show that all the levels concur that there has been some better operational planning as illustrated by the following figures from the respondents, 60% of executives, 55% of middle managers and 60% of non-managerial employees who responded. The figures are not significantly high because some ERP modules for operational personnel are yet to be implemented.
4.7 HCCL growth strategy and ERP Support

Table 4.16 ERP alignment to HCCL strategies

<table>
<thead>
<tr>
<th>ERP alignment to HCCL growth Strategy</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>% cum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>5</td>
<td>10.20</td>
<td>10.20</td>
<td>10.20</td>
</tr>
<tr>
<td>Agree</td>
<td>25</td>
<td>51.02</td>
<td>51.02</td>
<td>61.22</td>
</tr>
<tr>
<td>Uncertain</td>
<td>12</td>
<td>24.49</td>
<td>24.49</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>6</td>
<td>12.24</td>
<td>12.24</td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>2.04</td>
<td>2.04</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

61.2% of the respondents agree that ERP was aligned to the growth strategy, only 14.26% disagree. Of those who responded, 24.49% were uncertain on whether the ERP system was aligned to the growth strategy.

Figure 4.12 Alignment of ERP to strategy
Table 4.17 respondent level and alignment to strategies cross tabulation

<table>
<thead>
<tr>
<th>Respondent Level * ERP alignment to growth Strategy Crosstabulation</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>0</td>
<td>80</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Middle management</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>0</td>
<td>56</td>
<td>44</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>non managerial</td>
<td>5</td>
<td>16</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>14</td>
<td>46</td>
<td>20</td>
<td>17</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>25</td>
<td>12</td>
<td>6</td>
<td>1</td>
<td>49</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>10</td>
<td>51</td>
<td>24</td>
<td>12</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>

The cross tabulation table show that 80% of executives, 56% of middle managers and 60% of non-managerial employees who responded agree that there was an alignment of ERP to HCCL strategy. The alignment of ICT strategy to the business requirements or company strategy is of paramount importance to the success of an organisation.

Table 4.18 ERP benefits and Capital Expenditure

<table>
<thead>
<tr>
<th>ERP benefits outweigh CAPEX</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>% Cum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>6</td>
<td>12.24</td>
<td>12.24</td>
<td>12.24</td>
</tr>
<tr>
<td>Agree</td>
<td>17</td>
<td>34.69</td>
<td>34.69</td>
<td>49.93</td>
</tr>
<tr>
<td>Uncertain</td>
<td>13</td>
<td>26.53</td>
<td>26.53</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>12</td>
<td>24.49</td>
<td>24.49</td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>2.04</td>
<td>2.04</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.18 shows that only 46.93% of all respondents agree that the benefits of ERP will be more than the money spent on the system.

![ERP benefits out weigh CAPEX](image)

Figure 4.13 ERP returns and capital expenditure

<table>
<thead>
<tr>
<th>Respondent Level * CAPEX Crosstabulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPEX</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Respondent Level</td>
</tr>
<tr>
<td>% within Respondent Level</td>
</tr>
<tr>
<td>Middle management</td>
</tr>
<tr>
<td>% within Respondent Level</td>
</tr>
<tr>
<td>non managerial</td>
</tr>
<tr>
<td>% within Respondent Level</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>% within Respondent Level</td>
</tr>
</tbody>
</table>

Of those who responded, 40% of executives, 55% of middle managers and 45% of non-managerial employees agree that benefits of ERP outweigh the capital expenditure as shown on table 4.19.
Table 4.20 ERP and Bargaining power to suppliers

<table>
<thead>
<tr>
<th>ERP implementation Improves bargaining power</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>% Cum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>5</td>
<td>10.20</td>
<td>10.20</td>
<td>10.20</td>
</tr>
<tr>
<td>Agree</td>
<td>16</td>
<td>32.65</td>
<td>32.65</td>
<td>42.85</td>
</tr>
<tr>
<td>Uncertain</td>
<td>17</td>
<td>34.69</td>
<td>34.69</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>9</td>
<td>18.37</td>
<td>18.37</td>
<td></td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2</td>
<td>4.08</td>
<td>4.08</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.20 show that 42.85% of respondents agree that ERP will improve bargaining power of HCCL over its suppliers. This will allow HCCL to get spares or goods at cheaper prices to enable it to sell coal and related products at competitive prices.

Table 4.21 HCCL bargaining power over suppliers

<table>
<thead>
<tr>
<th>Respondent Level * Improve bargaining power to suppliers Cross tabulation</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>20</td>
<td>60</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Middle management</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>11</td>
<td>44</td>
<td>22</td>
<td>22</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>non managerial</td>
<td>3</td>
<td>9</td>
<td>14</td>
<td>7</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>9</td>
<td>26</td>
<td>40</td>
<td>20</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>16</td>
<td>17</td>
<td>9</td>
<td>2</td>
<td>49</td>
</tr>
<tr>
<td>% within Respondent Level</td>
<td>10</td>
<td>33</td>
<td>35</td>
<td>18</td>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

80% of executives, 55% of middle managers and 35% of non-managerial employees agree that ERP improves HCCL competitiveness through a good pricing structure.
4.8 HCCL readiness for ERP implementation (McKenzie’s 7s model)
The readiness for Hwange Colliery Company to implement ERP is assessed using the seven elements of McKenzie model, notably, existence of a strategy, the organizational structure, systems in place, skills, staff and shared values.

Table 4.22 HCCL readiness for ERP implementation

<table>
<thead>
<tr>
<th></th>
<th>HCCL readiness for ERP implementation (McKenzy’s 7s model)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
</tr>
<tr>
<td>Strategy</td>
<td>4.08</td>
</tr>
<tr>
<td>Structure</td>
<td>2.04</td>
</tr>
<tr>
<td>Systems</td>
<td>6.12</td>
</tr>
<tr>
<td>Skills</td>
<td>12.24</td>
</tr>
<tr>
<td>Staff/structure style</td>
<td>8.16</td>
</tr>
<tr>
<td>shared values</td>
<td>18.37</td>
</tr>
</tbody>
</table>

Figure 4.14 Existence of well-defined strategies
The results show that a total of 57.4% (those who agree and those who strongly agree) of respondents agree that HCCL has well defined strategies; however 10.2% of respondents disagree, while 30.61% of respondents were uncertain. The proportion of those who are uncertain is huge and shows that the strategies are not communicated to the whole organisation, especially low level employees. This poses a threat to the success of the ERP
implementation, since the project is supposed to be shared to every employee.

Table 4.23 Respondent level and strategy definition cross tabulation

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Defined strategies Crosstabulation</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Level</td>
<td>Executive</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>20</td>
<td>60</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Middle management</td>
<td>Count</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>11</td>
<td>56</td>
<td>11</td>
<td>22</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>non managerial</td>
<td>Count</td>
<td>0</td>
<td>18</td>
<td>13</td>
<td>2</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>0</td>
<td>53</td>
<td>38</td>
<td>6</td>
<td>3</td>
<td>100</td>
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<tr>
<td>Total</td>
<td>Count</td>
<td>2</td>
<td>26</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>4</td>
<td>54</td>
<td>31</td>
<td>8</td>
<td>2</td>
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</tr>
</tbody>
</table>

The table shows that 80% of the executive who responded agree that there exist well defined strategies. The percentage of those in agreement is 67% and 53% for middle management and non-managerial respectively. The figures shown are lower for lower level employees. This shows that top management is not sharing information with shop floor employees. The figures also suggest that strategy formulation is the domain of top management.
Figure 4.15 Management Systems availability

A total of 65.3% of respondents agree that HCCL has functional management systems in place to drive the organisations to the envisaged future; however 24.49% of the respondents were uncertain.

Table 4.24 Level and system availability cross tabulation

<table>
<thead>
<tr>
<th>Respondent Level * Management System availability Crosstabulation</th>
<th>Functional Mgt System availability</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Level</td>
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<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>20</td>
<td>80</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Middle management</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>non managerial</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>6</td>
<td>62</td>
<td>24</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>6</td>
<td>60</td>
<td>25</td>
<td>8</td>
<td>100</td>
</tr>
</tbody>
</table>

Analysis of the data through cross tabulation shows that all executive members who responded i.e. 100% agree that there are management systems at Hwange colliery. For middle management, the number of respondents who agreed that HCCL had systems was less than half at 44%.
This is a worrying situation since 44% of middle managers who responded are also uncertain about the existence of functional management systems in HCCL as shown in the table.

Figure 4.16 Respondent level and skills suitability
An evaluation of the respondents’ data shows that 79.59% of all respondents agree that HCCL has skills capability that is suitable for ERP implementation

Table 4.25 Respondent level and skills suitability cross tabulation

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Skills suitability</th>
<th>Total</th>
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</thead>
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<td>Agree</td>
</tr>
<tr>
<td>Executive</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>% within Respondent Level</td>
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<td>60</td>
</tr>
<tr>
<td>Middle management</td>
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<td>7</td>
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<tr>
<td>% within Respondent Level</td>
<td>0</td>
<td>78</td>
</tr>
<tr>
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<td>5</td>
<td>23</td>
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<tr>
<td>% within Respondent Level</td>
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<td>68</td>
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<td>33</td>
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<tr>
<td>% within Respondent Level</td>
<td>13</td>
<td>69</td>
</tr>
</tbody>
</table>
Figure 4.17 Management style to drive ERP implementation

Figure 4.17 shows that only 38.77% of respondents agree that the management styles and culture at HCCL are suitable to drive the implementation of ERP.

Discussion
The management style at HCCL is not fully supportive of ERP implementation. The implementation faces high risk of failure as noted by Kimberling (2006) who stated that any project without support from its top-management will fail.
Figure 4.18 Existence of SMART goals

Figure 4.38 shows that 51% of respondents agree that HCCL has well defined goal which are SMART i.e. specific, measurable, attainable, realist and within a particular time frame. Only 14.49% of respondents disagree.

Table 4.26 cross tabulation of SMART goals and respondent level.

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Smart Goals</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Uncertain</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Executive</td>
<td>Count</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Middle management</td>
<td>Count</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>0</td>
<td>44</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>non managerial</td>
<td>Count</td>
<td>3</td>
<td>13</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>% within Respondent Level</td>
<td>9</td>
<td>38</td>
<td>26</td>
<td>15</td>
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<tr>
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<td>Count</td>
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<td>7</td>
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<td></td>
<td>% within Respondent Level</td>
<td>6</td>
<td>46</td>
<td>23</td>
<td>15</td>
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</tbody>
</table>

All the executives who responded agree that HCCL has specific goals. 44% of middle managers agree that there are well defined goals. Of those non-managerial staff who responded, 47% agree.

The difference between Executive and nonexecutive show that either the goals are not smart or there is no communication between the top
management and the low level employees. It is difficulty for HCCL to attain its goals when the shop flow people are not aware of them.

Figure 4.19 Shared vision and strategy Communication
61.23% of respondents agree that the strategy, the Mission and vision are well communicated to the entire organisation. 22.45% of respondents disagree, while 12.24% were uncertain.

Table 4.27 cross tabulation of respondent level and strategy communication.

<table>
<thead>
<tr>
<th>Respondent Level</th>
<th>Count</th>
<th>% within Respondent Level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td></td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Middle management</td>
<td></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Non managerial</td>
<td></td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
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<td>19</td>
<td>45</td>
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</table>

<table>
<thead>
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<th>Strategy communication Crosstabulation</th>
<th>Count</th>
<th>% within Respondent Level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Uncertain</td>
<td>1</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>
Further analysis of strategy communication shows that of those executives who responded, 60% agree, 20% were uncertain and 20% did not agree. For those middle managers who responded, 89% agree and 11% disagree that there is adequate communication for the strategy. For the non-managerial who responded, 57% agree, 15% were uncertain and 27% disagree. The proportion of respondents who agreed that the strategy was well communication to the entire organisation is more than 50%, even at individual levels. This shows that the strategy was communicated to the whole organisation.

Share Values

Of those who responded, 61.23% agree that HCCL has shared values. 22.45 disagree.

Figure 4.20 Shared values
CHAPTER FIVE

5.0 Conclusion and Recommendations

5.1 Introduction
Conclusions are drawn from results and appropriate recommendations are made for improvement of the organisational efficiency and effectiveness. The recommendation will also assist HCCL management to draw action plans for improvement in ERP implementation.

5.2 Conclusions

- **Reasons and factors for ERP adoption.**
  The notable reasons for adoption of ERP by HCCL include; the need to support corporate strategy of low cost leadership through improved cost control and fast and efficient work processes arising from timely availability of information for quick decision making.

- **Utilisation of the ERP system at HCCL is low as evidenced by low time of ERP usage in relation to the Job as shown on table 4.1.**

- **From the survey results it can be concluded that there is an alignment between the ERP system as a management tool to the corporate strategy of Growth and low cost leadership.**

- **ERP’s current performance against expectations; In general, the current ERP performance does not meet the expectations as promised by the software vendors, marginal improvements have been realised in following areas since the implementation of some ERP modules; accuracy and time of reporting, Cost control and access to information. The following areas are yet to realise benefits of ERP system; reduction in Stockholding, emergence purchases, planned maintenance.**

- **Readiness for ERP implementation (McKenzie’s 7s model)**
  The results show that HCCL is not ready for ERP implementation, notable areas are; management style, that is not supportive of the ERP implementation, lack of communication between top management and low level employees, setting of goals that are not attainable and realistic, poor communication on shared values. The following gaps
were discovered, HCCL did not do BPR review, there is lack of management commitment to the ERP and management style does not fully support the implementation of ERP.

5.3 Recommendations

- There is need for a properly managed Business process reengineering (BPR). Implementation of an ERP system brings with it serious changes on how business is run, training of employees on ERP and Change management is required especially on top management who should support and drive the implementation process to enable the organisation to fully benefit from the system.
- It is recommended that HCCL recapitalise and complete the implementation of the remaining ERP five modules so as to improve on utilisation of the system.
- There is need for HCCL to improve its stock items to enable it to benefit from ERP and avoid emergency purchases.
- It is recommended that ERP system be aligned properly with the goals of the Hwange Colliery Company.
- Implementing ERP together with some business reengineering is also a way to maximise benefits from the ERP. It is recommended therefore that ERP Balance scorecard be implemented together with ERP at Hwange Colliery Company. The Balanced scorecard ensures that operations at Hwange colliery Company are more focus on customers, cost control through innovation, hence sustaining its strategy of growth and low cost leadership.

5.4 Areas for further study

- An assessment of the implementation of ERP with a Balanced scorecard to further enhance organisational benefits.
- Critical success factors in ERP implementation
- The role of organisational culture on ERP projects
5.5 Chapter Summary
There is poor ERP utilisation at HCCL and management style is not supportive of ERP implementation. Management style needs to change through management of Change courses for successful ERP implementation. There is low planned maintenance, no significant change on reduction in stock holding.

5.6 References
15. Hwange Colliery 89th Annual report, 2011
17. Payam Hanafizadeh, Allemeh Tabataba’i. (2011). A McKinsey 7S Model-Based Framework for ERP Readiness Assessment, University of Tehran, Iran
20. Richard G. Ligus, the 12 Cardinal Sins of ERP Implementation, 2006 Rockford Consulting Group
22. Helsinki, 2008 Drivers of ERP systems’ business value


33. TKMS1 Technical Initial Planning Study for Hwange Colliery Company limited. September 2010


36. C.T.Yang, 2005 Aligning ERP Implementation with competitive priorities: An exploratory study


38. Faith Elloumi, 2001 Value chain analysis approach


40. Michael E. Porter, h strategy and the internet Harvard business review, march 2001
Appendices 1: RESEARCH QUESTIONNAIRE

Dear respondent.

My name is Cornwell Charuma; I am a MBA Student at the University of Zimbabwe, Graduate School of Management (Registration number R9915621). I am carrying out a research with the following title:


The questionnaire will assist in answering the research questions. The research will help to understand the implementation challenges, benefits of ERP and also to recommend way forward for HCCL to improve competitiveness.

This research and the Information collected will be used purely for academic purpose only and will be kept confidential. Your participation in this study is greatly appreciated. Any queries concerning this questionnaire should be sent to; ccharuma@hwangecolliery.co.zw.

For queries on the authenticity of this study, kindly contact the research supervisor Eng. M. Manuhwa (mmanuhwa1@yahoo.com) or Dr. N. Kaseke

A/Director

Graduate School of Management

University of Zimbabwe

Box 167, Harare

Tel: +263 (04) 745316
Please tick inside one box per question.

Thank you

Respondents Level

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td>Middle Management</td>
<td>Non-Managerial</td>
</tr>
</tbody>
</table>

**Section A: Organisational Questions**

1. Do you know the HCCL strategies for the year 2012?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

2. During period under review, HCCL possessed the capabilities for ERP implementation

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

3. HCCL strategic planning system is integrated with information system

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>
4. The current level of ERP implementation in the HCCL is strategy supportive.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

**Section B: Perceived ERP Benefits**

5. How do you rate yourself on time of usage of ellipse in relation to your job?

<table>
<thead>
<tr>
<th>0-20%</th>
<th>20-40%</th>
<th>40-60%</th>
<th>60-80%</th>
<th>80-100%</th>
</tr>
</thead>
</table>

6. Does the ERP improve the level of efficiency in your area of work?

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

7. The organisation had an appropriate structure to put the organization’s chosen strategy into action.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>
8. How would you evaluate and score the following selected benefits against your expectations

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast and accurate reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Improved cost control</td>
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<tr>
<td>Reduction in stockholding</td>
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<td></td>
<td></td>
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<tr>
<td>Reduction in emergency purchases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved Planned maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved information access</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better operative planning processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved competitive advantage</td>
<td></td>
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</tbody>
</table>

Other comment;
.................................................................................................................................................................................................
.................................................................................................................................................................................................
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9. What are the main cause(s) of poor performance for HCCL?
10. What should management do to the ERP to improve HCCL competitiveness or performance?

11. Section C: HCCL Growth strategy and ERP support

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERP is well aligned to HCCL growth strategy</td>
<td></td>
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<tr>
<td>Benefits from ERP outweigh the capital expenditure</td>
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<tr>
<td>The role of ERP is clear in HCCL strategy</td>
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<td></td>
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<tr>
<td>ERP implementation will improve HCCL business performance</td>
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<td></td>
</tr>
<tr>
<td>Improved planned maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The ERP will improved HCCL bargaining power to suppliers</td>
<td></td>
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</tbody>
</table>
HCCL manpower utilization will go up

Decision making information is readily or will be readily available to executives with ERP

Other comment;

…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

12. Section D HCCL areas of improvement

The following capabilities were fully developed and strongly supports HCCL ERP implementation and strategy

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>There exist well defined strategies</td>
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<tr>
<td>There are functional Management systems</td>
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<tr>
<td>Skills capability is suitable for the ERP implementation</td>
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<tr>
<td>Management style promotes ERP</td>
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</tbody>
</table>
HCCL has well defined superordinate goals (SMART)

The infrastructure of HCCL is ideal to support ERP implementation

The vision, mission and goals are well communicated to the entire organisation

Other comments:

…………………………………………………………………………………………
…………………………………………………………………………………………
…………………………………………………………………………………………

13. Section E. Demographic information

Age group of the respondent

<table>
<thead>
<tr>
<th>Below 25 years</th>
<th>26-35 years</th>
<th>36-45 years</th>
<th>46-55 years</th>
<th>56 years and above</th>
</tr>
</thead>
</table>
14. What is the highest level of education that you have attained?

<table>
<thead>
<tr>
<th>Secondary</th>
<th>Certificate</th>
<th>Diploma</th>
<th>Degree</th>
<th>Post graduate</th>
</tr>
</thead>
</table>

15. How long have you been employed by HCCL?

<table>
<thead>
<tr>
<th>3-10 years</th>
<th>11-15 years</th>
<th>16-20 years</th>
<th>21 and above</th>
</tr>
</thead>
</table>

---------------------------------- End of questionnaire – Thank you! ------------------