

Human resource management (hrm) in cement industry



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In this research we are trying our best to provide a framework to optimally utilize the valuable manpower resource.

1. 10 CORE VALUES OF LUCKY CEMENT LIMITED (2009)

At Lucky Cement we comprehend our core values to be the most significant factor leading to the existence and growth of this prestigious organization.

How we accomplish our mission is as vital as the mission itself. Thus these values are not only on paper and pen but lounge deep in the heart of each individual working or associated with lucky cement.

These values are reflected within the name of LUCKY itself: They are as follows.

L = LEADERSHIP – We don't just innovate industry practices – we are defining the way business will be done in the future. We are pioneers.

U = UNDERSTANDING – Whereby we understand the demands of cement industry at a global level, parallel to the needs of people, associated with us in one way or the other.

C = COMMITMENT – One word that sums it all at Lucky Cement is the commitment of people to quality, relationship and most importantly our customers, who can never be disappointed at any cost.

K = KONSTANT – The most important element to balance any equation worldwide, at Lucky Cement we assign the value of Konstant with

consistency of profits, as profits are required to sustain and grow any organization. They are in-turn the ultimate measure of efficiency.

Y = YOU - This attitude is a built-in character. At lucky cement we always maintain, ' You first, Me last' approach, not only to please but to delight our employees, shareholders, customers, and all the other people who expect a result from Lucky Cement.

Lucky Cement Ltd produces 25000 tons of cement per day with about 4000 employees working in this industry. This industry plays an important role in a sustained economic growth of the country.

Sponsored by well known “ Yunus Brothers Group” – one of the largest export houses of Pakistan, Lucky Cement Limited currently has the capacity of producing 25, 000 tons per day of dry process Cement.

Lucky Cement came into existence in 1996 with a daily production capacity of 4, 200 tons per day, currently is an omnipotent cement plant of Pakistan, and rated amongst the few best plants in Asia.

With production facilities in Pezu (Production capacity: 13, 000 Tons per day) as well as in Karachi (Production capacity: 12, 000 tons per day), it has the tendency to become the hub of cement production in Asia (2009)

Lucky Cement Limited is managed by the team of professionals, who are committed and dedicated to fulfill the mission and vision of the organization. Two production plants and five marketing offices are managed by the staff strength of then 1800 permanent employees throughout Pakistan.

Production & Sales Volume Performance:

During the year under review, our Company achieved all time high volume of production and sales as enumerated in the table below:

A comparative analysis of sales volume of the industry vis-à-vis our Company is as

The analysis of the market share of Our Company is as under:

Financial Performance:

A comparison of the key financial results of Our Company for the year ended June 30, 2008 with the same period last year is as under:

Sales Performance

During the year under review our company achieved an overall net sales revenue growth of 35.43% as compared to same period last year. Increase in revenue was attributed due to both increases in volume by 19.75% and net retention by 15.68%. Our Company continued to focus more on exports because of strong establishment of its brand in various export markets with higher retention margins. The domestic sales registered a negative growth of 6.38% because of higher exports made by the company which registered a growth of 116.29%. The ratio of sales revenue from exports was 54.43% whereas the local sales accounted for 45.57% during the financial year under review. The average combined net retention prices per ton improved by 13.10% over the comparative period last year. The prices in the international markets remained robust whereas the prices in the domestic market were under pressure, however in the last quarter the prices started

increasing because of substantial increase in production cost coupled with duties and taxes increased by the Government in federal budget

Cost of Sales

The major cost of production for cement manufacturing is the energy cost which constitutes 68.77% of the total cost of production. The energy cost is further divided into heat energy and power energy which constitutes 44.12% and 24.65% respectively of the total cost of production. As a matter of fact, the international prices of coal and oil have increased manifold during the year under review which have badly affected the cost of production both in Pakistan and abroad. The international prices of coal were approximately US\$ 80 per ton by end of last year which has now increased to US\$ 210 per ton by the year ended June 30, 2008. The prices of furnace oil have also increased tremendously which have also affected the cost of production.

Except loose cement sales, the cement is packed either in paper bags or polypropylene bags. The increase in the prices of paper and the polypropylene in the international markets have also increased the cost of cement bags substantially. Similarly, the other cost factors have been increased either because of inflation, oil prices and depreciation of Pak Rupee for imported items.

We are pleased to report that, our Company has taken various measures to mitigate the impact of increase in cost of production. Resultantly, the production cost per ton of our Company was only increased by 18.89%.

Gross Profit

Our Company achieved a gross profit rate of 25.73% for the year ended June 30, 2008 compared to 29.35% gross profit rate achieved same period last year. However, the gross profit in term of absolute value was increased by 18.71% because of the volumetric growth.

Finance Costs

The finance costs was reduced substantially from Rs. 186 per ton last year to Rs. 23 per ton during the year ended June 30, 2008 mainly because of interest rates hedging executed by the Company by entering into cross currency swaps agreements with the banks. These hedging transactions allowed the company to offset positive interest differential between KIBOR and LIBOR against the total financing cost of the Company. On the other hand, these swaps exposed the Company to currency risk for depreciation of Pak Rupee but at the same time ever increasing exports of the Company provided a natural hedge against these swaps transactions to mitigate the currency risk.

As you know the economic and political scenario of the Country started deteriorating from November 2007 resultantly the Pak Rupee lost almost 12% of its value by June 30, 2008 as compared to June 30, 2007. Due to the depreciation of Pak Rupee our Company on the one hand incurred exchange loss of Rs. 800.359 million on cross currency swap but on the other hand realized exchange gain of Rs. 277.816 million on realization of GDR proceeds and export sales.

Distribution Costs

Distribution costs incurred by the Company were in-line with the increase in the volume of export sales. The percentage of distribution costs to net export sales was 12.51% for the year ended June 30, 2008 compared to 11.66% last year.

Deferred Taxation

During the year under review, the deferred tax provision amounted to Rs. 456.53 million was reversed out of the total provision of Rs. 1,515.54 million created in prior years due to higher ratio of local sales. Since the ratio of exports has increased which are covered under presumptive tax regime on which no deferred tax provision is required, therefore to that extent deferred tax was reversed.

Contribution to the National Exchequer

Our Company contributed a total amount of Rs. 3.907 billion (2007: Rs. 4.137 billion) to the Government Treasury in shape of taxes, levies, excise duty and sales tax. In addition to that our Company earned precious foreign exchange of approximate US\$ 150 million during the year under review from exports besides bringing foreign investment of US\$ 109 million against the issuance of GDRs in the international market.

We briefly describe the problem at hand in the following paragraphs.

1.20 The Problem Domain

This research work is concerned with adaptation of Optimization Techniques to utilize the manpower resources in a best possible way in cement

industries with reference to Lucky Cement Ltd, Pezu, Pakistan. In this research we are trying our best to develop a framework how to utilize the manpower resources optimally in industrial sector, especially in cement industries. Literature review reveals that no exact attempt has been made by researchers, although much relative work has been done in one or in the other form.

1. 30 Aims and Objectives

The basic objectives of the research work can be summarized as below:

- To develop a questionnaire for finding decision-making parameters along with their weights
- To prepare a group of models that can depict the research work clearly
- To validate the Symbolic Model through test data
- To publish the results of the research work Nationally as well as Internationally

Similarly, aims of this study are given as under:

- To prepare a standard knowledge acquisition tool for facts finding
- To develop a framework that might work just like a pedagogical device for students as well for researchers
- To pinpoint the importance of human resource utilization, so that govt. and other organization may know the importance of this valuable resource
- To prepare a baseline for further research in this field
- To minimize the cost of production in cement industries
- To apply the model in other industries

1. 4 Scope

This study is limited to the application of Optimization Techniques to Manpower resources in cement Industries with respect to Lucky Cement Ltd, Pakistan. However, it can be applied to all cement industries in Pakistan and in the rest of the world. Test data will be chosen from the different plants of Lucky Cement Ltd, Pakistan, which is the largest cement industry in the Asia.

This research work is a multidisciplinary approach, which will combine the knowledge of experts of various fields of sciences, like, Management, Economics, Operations Research/Quantitative Techniques, Computer Science, Information System, Decision Theory and Statistics.

1. 5 Justification of the Study

The whole universe has been created by Almighty Allah for humanity, while human, as stated earlier are given the power of intelligence. So the first and foremost job of human being is to know their importance in the world and how to utilize this most valuable resource. Each and every thing in the universe has some value and importance whether we have knowledge about it or not yet but men have the capability to mobilize the remaining resources of the universe. Intelligence people can utilize these resources in a best possible way to fulfill their unlimited wants.

Among all the inputs to any system i. e. Management, Money, Material, Men, Machinery, Mansion, Message etc the most important one is the Man who is responsible to operate and activate these resources economically, efficiently and effectively to achieve maximum utility. That is why when managerial staff makes rational decisions; right information at the right time and in right

form is required to them. Hence research is required to find out ways and means of optimum utilization of the manpower resource in the industrial sector in general and in cement industries as special.

Literature Review

Manpower planning is truly an interdisciplinary activity rooted in such diverse fields as economics, psychology, law and public administration, industrial relations, computer science, and operations research. National manpower planning is the integral portion of macro-economic planning which attempts to achieve maximum utilization of human resources in terms of societal goals (Bib09).

The closest reference to the expression “ optimal utilization of resources” is “ value-for-money”. According to this universally-recognized concept, all business processes are characterized by the use of a group of inputs (resources), which are transformed (activities) into outputs (results). The optimization of resources is based on three characteristics: economy, effectiveness and efficiency. The economy of resources consists of acquiring resources of the required quality, at a reasonable cost and in a timely manner. The effectiveness of resources is aimed at ensuring the adequacy of resources relative to business needs and their appropriate use. The efficiency of resources is measured by the attainment of an organization’s business objectives (Bettm).

Various optimization techniques for Integrated Renewable Energy Sources have been reported in the literature like: (i) Linear Programming (LP) (ii) Geometric Programming (GMP) (iii) Integer Programming (IP) (iv) Dynamic

Programming (DP) (v) Stochastic Programming (St P) (vi) Quadratic Programming (QP) (vii) Separable Programming (Se P); (viii) Multi-objective Programming (MOP); (ix) Goal Programming (GP); (x) HOMER; (xi) VIPOR; and (xii) Hybrid 2, etc (A. K. Akella, M. P. Sharma and R. P. Saini, 2007).

In the USA, for example, the President's Commission on National Goals issued the following list with its attendant implications for manpower needs: improved living standard, capital expansion with emphasis on transportation and utilities, urban development, social welfare, health coverage, education, transportation, national defense, research and development increases, international aid, space exploration, agriculture, manpower retraining, area redevelopment to promote full employment in regionally depressed regions, and development of natural resources (Bib09).

Boxall, Purcell, and Wright distinguish among three major subfields of human resource management (HRM): micro HRM (MHRM), strategic HRM (SHRM), and international HRM (IHRM). Micro HRM covers the sub functions of HR policy and practice and consists of two main categories: one with managing individuals and small groups (e. g., recruitment, selection, induction, training and development, performance management, and remuneration) and the other with managing work organization and employee voice systems (including union-management relations). Strategic HRM covers the overall HR strategies adopted by business units and companies and tries to measure their impacts on performance (Mark L. Lengenick-Hall, Cynthia A. Lengenick-Hall, Leticia S. Andrade, Brian Drake, 2009).

Broadly stated, manpower planning is the process to ensure that the right people are at the right place at the right time in sufficient numbers to efficiently accomplish anticipated tasks. Indeed, the field can be viewed as embracing information systems, management participation, and mathematical modeling – largely represented by the disciplines of computer science, organization theory, behavioral science, and operations research (Bib09).

Strategic human resource management (SHRM) focuses on aligning internally consistent human resource management (HRM) practices to build employees' knowledge, skills, and abilities in an effort to support competitive strategies and achieve business objectives. SHRM is gaining increasing importance because strategic management, in a knowledge-based economy, emphasizes that employees are considered to be a primary component for attaining a competitive advantage. SHRM is gaining increasing importance because strategic management, in a knowledge-based economy, emphasizes that employees are considered to be a primary component for attaining a competitive advantage. HRM practices create procedures that institutionalize the building of employees' knowledge, skills, and abilities throughout the organization to promote valued, unique, and difficult to imitate organizational competencies which support competitive advantage (James D. Werbel, Samuel M. DeMarie, 2005).

Project scheduling techniques under human resource constraints are referenced with the objective of minimizing project duration, and a proper human resource allocation algorithm standing on multi-project scheduling, with a heuristic procedure for searching out approximate optimal allocation, <https://assignbuster.com/human-resource-management-hrm-in-cement-industry/>

is adopted. A forward/backward scheduling technique is the primary allocation algorithm; it evaluates maximal and minimal labor power allocations for activities (al., 2006).

Analysts develop strategy for allocating limited manpower resources based on command priorities, historical utilization data, and analysis of mission and functions. Analysts should have thorough knowledge of the Planning, Programming, Budgeting and Execution System (PPBES) documents or systems, the Structure and Manpower Allocation System (SAMAS), command plan, and TAADS for use in distributing and tracking approved allocations by budget program and organization (Man09).

2. 1 Welcome to the global village & MIS

There's no doubt that the world of work as we know it is rapidly changing. Even as little as fifteen years ago, the times were calmer than they are today.

Back in 1973, with the first oil embargo, U. S. businesses began to realize the important effects that international forces had on profit and lost statements. The world was changing rapidly, with other countries making significant inroads into traditional U. S. markets. Unfortunately, U. S. business did not adapt to this changing environment as quickly or adeptly as they should have. The result was that U. S. Businesses lost out in the world markets and have had to fight much harder to get in. Only by the late 1980's did U. S. businesses begin to get the message. But when they did, they aggressively began to improve production standards, focusing more on quality and preparing employees for the global village (The production and marketing of

goods & services worldwide). It is on this latter point that human resources will have the biggest effect (David A. Decenzo and Stephen P. Robbins, 2002).

Computer and information Technology has converted the world into a globe and definitions of different terminologies have been changed such as:

Market was defined as a place where two parties comes and make transaction, but due to Internet, no place is required for dealing & making transactions. Every thing can be made at home i. e. purchasing, selling, bank transactions etc.

T. Lucey (Lucey, 1991-1992) define MIS as “ The combination of human & computer-based resources that results in the collection, storage, retrieval, communication & use of data for the purpose of efficient management of operations & for business planning” (Lucey, 1991-1992).

2. 2 Problems with MIS:

In developing countries such as Pakistan, Different problems are faced during improvement in any field with respect to MIS. T. Lucy generalized all the problems in to six categories (Lucey, 1991-1992)

- Lack of management involvement with design of MIS;
- Narrow and /or inappropriate emphasis of the computer system;
- Undue concentration on low level data processing application particularly in accounting area
- Lack of knowledge management of computers;

- Poor appreciation by information specialists of management's true information requirements and of organizational problems;
- Lack of top management support;

2. 3 Knowledge Requirements for MIS:

As there are new concepts & techniques are developed and also developing with respect to the solution of the problems. T. Lucey figure out the major areas of knowledge with respect to development & operation of MIS (Lucey, 1991-1992).

General

Systems

Concepts

Management

Functions

&Levels

The Nature of Data

Information &

Communications

The Influence

Of Information

Technology

Planning & Decision

Making Methods

& Techniques

Control Principals

Feedback &

Feed forward

Organizational

Structures and

Processes

Knowledge Requirements for the Development & Operation of MIS

T. Lucey also describes the information system in outline as shown in the figure (Lucey, 1991-1992);

Data

Capture

Data

Data

Processing

File

Storage

Processed Data

Data

Communication

Processed Data

Users

Users

Processing/

Understanding

User's Memory/Knowledge base

I

Information

Actions/

Decisions/

Changes etc

Information System in Outline

Mehmet describes and evaluates seven methods of fore-casting requirements by industry and occupation:

- Econometric method
- Productivity method
- Trend projection method
- Employer's survey method

Method of forecasting specialized manpower requirements inter-area comparisons method

Elasticity of factor substitutions method. (O., 1965)

Ahamad and Blaug (Ahmad B. and Blaug M.) point out that manpower forecasting is still in its infancy yielding crude and often useless results. All too many models are still based on the woefully lacking fixed-coefficient approach pioneered by Fames utilizing productivity, education and participation ratios. The predominantly demand-oriented approach, the assumption that ratios are independent of technological growth, changes in industry output and education standards, and the failure to accommodate substitution effects have contributed to make the models suspect as serious undertakings (S, 1962).

Broadly stated, manpower planning is the process to ensure that the right people are at the right place at the right time in sufficient numbers to efficiently accomplish anticipated tasks (E. W., 1967). Wikstrom (W. D, 1971) identifies seven contributing factors:

- Rapidity of technological change.
- long lead time for training and development, tight labor market,
- demographic changes (e. g., lower birthrate during depression produced decrease in 35-44 age group),
- manpower coming to be viewed as critical corporate resource,
- government influence through programs and contracts,
- Manpower planning is becoming accepted as integral part of corporate planning.

The last point only serves to attest to the complexity of manpower planning as an integral component of corporate planning – a vast and ill-defined field in its own right. As Lorange (Lorange. P, October 30 – November 2, 1974) comments in his survey: “ I am left with the uncomfortable feeling that somehow it is difficult to fit the bits and pieces together. There seems to be considerable lack of consensus in the literature when it comes to such central issues as the nature of planning systems, what constitutes relevant empirical areas of research, etc. Also, the common vocabulary seems to be surprisingly small and too often lacks adequate definitions. The research design frequently seems to be sloppy, particularly in neglecting to state assumptions when limit the universality of the sample.”

2. 4 Models:

There are different models that are used for planning and decision making. T. Lucey Defined the model in simple words “ Model is any simplified abstract of reality”. It may be physical object such as architectural scale model or it may be what is termed as ‘ symbolic model’. These are representation of reality in numeric, algebraic, symbolic or graphical form.

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Business model are symbolic models which represent the organization operations by set of logically linked arithmetic & algebraic statements. These models are used to enhance a manager analytical ability.

T. Lucy broadly classified the models used for management purpose (Lucey, 1991-1992).

Computer Based

Management Models

Simulation Models

-Enable Different Conditions to be

Explored

Optimization Models

-e. g. Linear

Programming

(Useful for deriving

the best solution in

certain structured

Probabilistic Models

-Incorporate Uncertainty

by Allowing Multi-Point

Estimates

Deterministic Models

-Assume Certainty by using

single point Estimates

decisions usually at

Tactical & operational

Levels)

(Useful for Exploring Risk & Uncertainty and Complex Relationships Provide answers to 'What If?' Questions can be useful at all levels)

2.5 Model Development:

According to T. Lucey “ To develop a model which is realistic and has adequate predictive qualities is a collaborative effort between management and information specialists (Lucey, 1991-1992).

He Key points are:

The model should have a purpose and be objective oriented.

Model building is an iterative, creative process with the aim of identifying those variable and relationships which must be included in the model so that it is capable of predicting overall system performance. It is not essential or

indeed possible, to including all variables in a model. The variables in a model of greatest importance are those which govern, to a greater or less extent, the achievement of the specified objectives. These are the critical variables.

The best model is the simplest one with the fewest variables that has adequate predictive qualities. To obtain this ideal there must be a thorough understanding of the system. The management who operate the system have this understanding and must be involved in the model building, otherwise over elaborate and overly mathematical models may result if the model building exercise is left to systems professionals.” OR & Systems Expertise

Model

Development

System being

Studied, including

Management and

Personnel, Physical

Resources, Inputs

and Outputs etc

Model Objectives

Management ' Know How'

Raw Data

Model Validation

and Testing

Implementation

Of

Decisions

Management

Review of

Model Results

Processing

of Model

Management Model Results

Decisions

Optimization:

James. O' Brien defined optimization as " It is a process of finding optimum value for one or more target variables, given certain constraints. Then one or more other variables are changed repeatedly, subject to the specified

constraints, until the best value for the target variable are discovered” (O’ Brien).

Mer P. Martin define optimizing as “ The process of seeking the best possible choice”

(C Merk P. Martin, 1991)

Purkiss (Purkiss) developed a linear programming (LP) model for hiring, firing, and redeployment of workers in the British Steel Industry. Assuming constant flow rates, his model minimized manning costs (over manning, under manning, and current level). Purkiss acknowledged the difficulty of determining cost coefficients and agreed that it is preferable to have hierarchically structured sub-objectives.

Morgan (RW) proposes an LP model for the Royal Air Force in which he minimizes costs associated with recruitment (advertising and training) , redundancy, over manning, and pensions by controlling manning levels, promotions and redundancies subject to establishment and flow constraints.

While it might seem to the uninitiated reader the LP models currently dominate the field, this is not necessarily the case. In many instances, aggregated simulation models precede more complex work. Another approach is “ entity” simulation modeling in which individual records are stochastically “ aged” during a simulated time horizon (Piskor, 1976).

2. 7 Reasons for Using Models

T. Lucey summarized the reasons into three main categories (Lucey, 1991-1992);

- The model is cheaper.
- Study and redesign.
- Specialized assistance.

Research Methodology

The plan of the study has the following stages:

Problem Identification

Development of a Questionnaire,

Data Gathering

Data Analysis

Data Modeling

Testing and Results

Publication of Results

Documentation

Data Collection & Analysis

The expected results of this study may be:

A data gathering tool in the form of a Questionnaire

A group of models, like, Conceptual Model, Physical Model, Symbolic Model
etc

Results and Information for Decision Making

Thesis and results Publications