

# ERP: A Tool for Effective Management of Sugar Factory: A Case Study of Vasantdada Shetkari Sahakari Kharkhana, Sangli

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**Abstract** -Today most of the sugar factories use ERP system for business integration. ERP is an effective tool to coordinate different activities of organization which leads to effective utilization of resources in organization. Success rate of ERP implementation is depend on many factors like change management, implementation methodology, user training, vendor support and business process reengineering. This research paper aims to study ERP implementation in Vasantdada Shetkari Sahakari Kharkhana, Sangli. Survey is carried out to study ERP implementation status, vendor, ERP selection criteria, modules, ERP training, benefits and critical issues observed in ERP implementation. Researchers identified issues in ERP implementation & made attempt to provide remedial measures for them.

**Key Words** - ERP, IT, BPR, VSI, GIS

## I. INTRODUCTION

Sugar industry is second largest agro industry in India and greatly contributing for rural development and country's national economy. Sugar industries include both cooperative and private sugar factories and are situated in rural part of country.

Sugar industry is facing multiple challenges related to management of internal resources as well as external stakeholders of organization such as out grower, transporters, loaders, cane cutters, local statutory authorities etc. This industries also has on environmental impact like uncertainties in rainfall, change in government policies, import/export regulations, change in global demand etc. Today industries are using information technology for communication and data management. Different department are using their own special purpose software for transaction processing.<sup>[6]</sup> It leads to many problems like redundancy of data, increase administrative expenses, departmental data backup, excessive manpower, harvesting planning issues, security issues etc.

Vasantdada Shetkari Sahakari Sakhar Karkhana Ltd., is located at Sangli, Tal-Miraj, Dist-Sangli. It is cooperative sugar factory with crushing capacity is 7000 TCD. The factory has started various byproduct units like cogeneration, distillery, liquor, compost/fertilizer, acetic acid and cattle feed

etc. Factory is connecting to 150 village's in Sangli district and having more than 35000 members. Organization has started ERP implementation in 2013 and visual basic is used as front end and SQL-Server is used as backend tool for ERP system. Before ERP they have used FoxPro based model wise application software which covers Finance, agricultural and cane management modules. Organization is implementing parallel approach for ERP implementation.

## II. LITERATURE REVIEW

Today, most of the sugar factories are using information technology for managing different activities of organization but none of units are adopting scientific approach for IT implementation. One of the latest developments in IT field is ERP system. Successful implementation of ERP leads to success of organization. ERP is an enterprise wide integrated management system which is based on centralized database and module wise functionalities.<sup>[1]</sup> Due to modularization it provides information transparency that helps to determine status of every department at any time, at any place and anyone who are the part of this system. ERP packages are targeted for manufacturing industries which consist of various modules like material management, production, finance, human resource, quality control, sales and distribution etc. ERP is a tool for most of the industries for managing many business functions of organization such as customer order fulfillment and customer satisfaction. ERP helps to integrate different business process together. Successful implementation of ERP leads to many direct benefits and indirect benefits such as business integration, flexibility, use of latest technology, better analysis and planning capabilities, better customer satisfaction, on time shipment, reduction of lead time and cycle time<sup>[2]</sup>

According to earlier study ERP software helps to sugar factories to increase profit 22 to 23%<sup>[3]</sup> ERP implementation affects all aspects of organization like strategic, structural, day to day operations and workflow.<sup>[4]</sup> VSI developed ERP software for sugar industries that is user friendly, flexible for implementation, customizable and ensures security management feature.<sup>[5]</sup>

To meet the challenges of complicated labor and process intensive industry needs ERP system that will help management of internal and external resources optimally. ERP software is developed according to industry needs to manage challenges associated with sugar industry.<sup>[6]</sup>

**III. OBJECTIVE OF STUDY**

- A. To study the present status of ERP implementation in organization
- B. To examine critical issues of ERP implementation.

**IV. RESEARCH METHODOLOGY**

A study is descriptive inferential in nature and data is collected by using structured schedule. Data is gathered to study prerequisites of ERP implementation, ERP package selection criteria, number of ERP modules implemented, current status of ERP implementation, implementation methodology adopted, benefits of ERP to organization and problems observed in ERP implementation

Data is collected from all Head of Departments in which ERP is implemented and technical staff of IT department.

**A. Present Status of ERP Implementation:** Below table shows different ERP modules (subsystems) implemented in various departments in Vasantdada SSK Ltd., Sangli.

**TABLE I: ERP MODULES IMPLEMENTED:**

Sr. No.	Modules	Sub modules (Subsystems)	Fully Implemented	Partially Implemented	Not yet Implemented
1.	<b>General management</b>	General Administration	No	No	Yes
		Strategic Planning	No	No	Yes
		Project Management	No	No	Yes
		Vehicle	No	No	Yes
		Guest House	No	No	Yes
		Legal	No	No	Yes
		Civil irrigation	No	No	Yes
		Watch & Ward	No	No	Yes
2.	<b>Finance</b>	Share Accounting	No	No	Yes
		Cane Accounting	Yes	No	No
		Deposit Accounts	Yes	No	No
		Harvesters Billing	Yes	No	No
		Transport Billing	Yes	No	No
		Financial Accounting	Yes	No	No
		Store Accounting & Costing	No	Yes	No
		Sales & Distribution	Yes	No	No
		Tax	Yes	No	No
Financial Analysis	Yes	No	No		
3.	<b>Agriculture &amp; Cane Management</b>	Cane Development	No	No	Yes
		Harvesting	Yes	No	No
		GIS	No	No	Yes
		Transport Management	Yes	No	No
		Weigh bridge & yard management	Yes	No	No
4.	<b>Labor &amp; Welfare</b>	Organization Structure	No	No	Yes
		Manpower Planning	No	No	Yes
		Recruitment & Selection	No	No	Yes
		Attendance, OT and Leave	Yes	No	No
		Payroll	Yes	No	No
		Performance Appraisal	No	No	Yes
		Increments and promotions	No	No	Yes
		Discipline Actions	No	No	Yes
		Deputation	No	No	Yes
		Training	No	No	Yes
Medical & Sanitation	No	No	Yes		
5.	<b>Engineering &amp; Manufacturing (Material Management) &amp; (Production Management)</b>	Material requirement Planning	No	No	Yes
		Purchase Management	No	Yes	No
		Store Management	No	Yes	No
		Material & capacity Planning	No	No	Yes
		Shop floor control	No	No	Yes
		Quality Management	No	No	Yes
		Laboratory Management	No	No	Yes
		Laboratory Analysis	No	No	Yes
6.	<b>Byproduct Management</b>	Sugar Godown & Excise	No	No	Yes
		All submodules	No	No	Yes

(Source: Primary data)

Above table shows that the general management module consist of different subsystems like general administration, project management, vehicle, guest house, legal, civil irrigation, watch and ward. Factory does not implement any subsystem of general management module.

Factory has fully implemented cane accounting, deposit accounts, harvesters billing, transport billing, financial accounting, tax, financial analysis, sales and distribution subsystems whereas store accounting and costing module is partially implemented and share accounting module is not yet implemented, under finance department.

Factory has fully implemented cane development, harvesting, weighbridge and yard management modules whereas transport management, GIS modules are not yet implemented from agriculture department.

Organization fully implemented payroll module, attendance, OT and leave from labor and welfare department. Whereas manpower planning, recruitment and selection, performance appraisal, increment and promotion, disciplinary action, accidents, deputation, training, medical and sanitation these modules are not yet implemented.

Organization partially implemented purchase and store modules of Engineering and manufacturing department whereas material requirement planning, capacity planning, quality management, laboratory management and analysis, sugar go down and excise modules are not yet implemented.

Byproducts module covers production, quality management, laboratory analysis, marketing, HR and finance subsystems are not yet implemented.

**B. Issues in ERP implementation:** For knowing various issues involved in ERP implementation opinions of respondents are collected using likert scale and weighted average is calculated. Following table shows intensity of various implementation issues in factory

TABLE II: ERP IMPLEMENTATION ISSUES

Sr. No.	Issues	Weighted Average	Rank
1.	Heavy gaps in requirements	4.3	I
2.	Employee resistance	4.3	I
3.	Customization require long time	4.2	II
4.	Data integration problem	4	III
5.	Lack of technical support	4	III
6.	Chang management	4	III
7.	Lack of top management involvement	3.9	IV
8.	Lack of awareness of benefits of ERP	3.9	IV
9.	Lack Software trainings by vendor	3.8	V
10.	Lacking in business reengineering	3.2	VI
11.	Actual cost exceed budget	3.2	VI
12.	Poor planning	3.1	VII
13.	Insufficient IT infrastructure	2.8	VIII

14.	Improper estimation of time and resources	2.1	IX
15.	Lack of Data accuracy	1.8	X
16.	Unreliable Vendor	1.8	X

Source: Primary Data

Above table reveals that heavy gaps in requirements and employee resistances receives rank I, it indicate that these issues are major in ERP implementation. Customization require long time receives II rank, data integration problem, lack of technical support, change management receives rank III whereas lack of top management involvement lack of awareness of benefits of ERP, lack of software training receives IV rank which shows higher intensity of these issues.

Lack of training, BPR, inadequate budget, poor planning and insufficient infrastructure issues receives ranks V,VI, VII and VIII respectively which shows existence of these issues and intensity is moderate. Besides this Improper estimation of time and resources receives IX<sup>th</sup> rank and Lack of Data accuracy and Unreliable Vendor receives X<sup>th</sup> rank which shows existence of these issues with lower intensity.

V. FINDINGS

- Study reveals that Vasntdada sugar factory has fully implemented agricultural, payroll, finance and accounting modules whereas purchase and store modules are partially implemented and share accounting, general management, labor welfare modules are not yet implemented.
- Engineering & manufacturing and byproducts areas are ignored in ERP implementation even though these areas are important.
- There is tremendous scope for ERP implementation in Engineering, Byproduct, General management & HRM department.
- Heavy gaps in requirements, employee resistances, and customization require long time, data integration problem, lack of technical support, change management, lack of top management involvement, lack of awareness of benefits of ERP, lack of software training are observed as major issues in ERP implementation.
- End users are using their skill and experience for customization of ERP software as per their requirement where no formal training program is organized for end users.
- Heavy gaps in requirements and employee resistance for ERP are major issues observed in ERP implementation whereas customization require long time, data integration problem, lack of technical support, change management lack of training, BPR, inadequate budget, poor planning and insufficient infrastructure related issues are found.
- Factory has not adopted scientific approach for ERP implementation.

VI. SUGGESTIONS

- Factory should adopt scientific approach for ERP implementation which helps for minimizing various issues observed in ERP implementation,
- Factory should go for implementation of Engineering & Manufacturing modules with proper BPR which helps organization for effective resource management, improving quality and reduction of cost.
- Top management should involve in ERP implementation by establishing steering committee.
- Factory should provide necessary training to end users and technical staff.

### **VII. CONCLUSION**

Present ERP software fulfills cane management, Soil Laboratory Analysis, agriculture and Weigh Bridge Module, Cane Billing, Financial Accounting, Time office, Share Management modules but does not covers all sub modules of labor welfare, engineering ,manufacturing, byproduct management and general management. Factory should adopt scientific approach for ERP implementation and recommendations made by researcher for effective management of resources which helps organization to survive in cut throat competition in industry.

### **REFERENCES**

1. F. F.-H. Nah, J. L.-S. Lau, and J. Kuang, "*Critical factors for successful implementation of enterprise system*", Business Process Management Journal, vol. 7, no. 3, pp. 285-296, 2001.
2. ERP demystified
3. Rajendra Kumbhar, "*ERP system for effective management of cooperative sugar industries-A casestudy of sahyadri SSK, ShirawadeKarad*", International Journal of Information Technology and Knowledge Management, Volume 4, No. 1, pp. 33-37, June 2011
4. Venugopal C. published phd thesis on "*The study of factors that impact the outcome of an ERP implementation*", Faculty of Management Science, ANNA, University, Channai, April 2011.
5. T.K. Balwe (2004), Proceedings of State level conference on "*Cooperative Sugar Industry in Maharashtra: Past, Present and Future*" seminar held at Pune.
6. [http://www.slideshare.net/ess\\_india/erp-for-sugar-industry-essindia](http://www.slideshare.net/ess_india/erp-for-sugar-industry-essindia).
7. <http://www.vsisugar.com>.