



A Case Study: Problems and Prospects of IT Implementation in Sugar Factory

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Abstract- Information Technology implementation process is the study of design, development and implementation of computer-based Information Systems, particularly in software applications, computer hardware & networking. The Information Technology is relatively large field and covers many aspects. Traditional ways of operations can be transformed into interactive and collaborative ways to help management to take appropriate and precise decisions to increase efficiency and awareness of an organization.[1] Present article helps to study 'Problems and Prospects of IT Implementation in sugar factory'. Specifically, this study will address the management and organizational issues that have a direct relationship to IT and related processes implementation needs.

Keywords-Sugar Factory, Hardware, Software, Networking, IT Implementation, Problems

I. INTRODUCTION

Sugar industry is one of the most important agro-based industries in India and ranks second amongst major agro-based industries in India. This industry has a long tradition in this country; it started growing in an organized way during the 1930s after introduction of the sugar industry protection act in 1932. In India, Uttar Pradesh share major role in sugar industry [26].

The progress of the world is standing on three innovations namely Science, Technology and Management. The agriculture sector has been slow to adopt the use of information technology (IT), despite its potential to improve efficiency of planning and decision making. However, several IT-based projects have been started at various agricultural institutions. A vision of a computer network linking the agricultural institutions is presented. This network forms the foundation for an integrated National Agricultural Information. Information Technology based projects are currently under way at most of the institutions related to agriculture in Mauritius. In this context, the Ministry of Agriculture is computerizing the management of the agricultural sector through the Agricultural Management Information System (AMIS) project as a means of improving access to information for policy making (NCB and WB 1993). This project, when implemented, will introduce a new point of view of the sector to the agricultural community. An information system can be defined as a structure through which the user is provided with relevant information to make a decision. Users of agricultural information include farmers, co-operative societies, non-governmental organizations, extension officers, researchers, students, educators and policy makers, all using information at different levels of detail. Agriculture throughout the world has undergone a large- scale revolution in production technology during recent decades [30]. The present research is an effort to find out the Problems for implementing Information Technology in sugar factory.

II. LITERATURE REVIEW

A. Ajay Kumar Ray and Tinku Acharya (2004):

In their published book 'Information Technology', has almost covered all aspects of Information Technology. All these aspects are divided into following three parts.

Part I covers basic issues and concepts such as the Internet, database management systems, telecommunication systems, computer networks, image processing and multimedia technology.

Part II covers the development of Information Processing such as data and image compression, audio and speech coding, security issues, advanced database systems, soft computing, content based information retrieval and the World Wide Web.

Part III focuses on a number of application areas such as bioinformatics, Information Technology in healthcare, e-commerce, remote sensing and global information systems color image analysis, information technology for rural development and application of information technology in the industry, load forecasting, mining and geology[6].

B.Alexis Leon (2007):

In their published book 'ERP Demystified' discussed. It is divided into eight sections.

The first section give an introduction to ERP, explains the basic concepts, demystifies the common ERP myths, discusses the risks and benefits of ERP and help in justifying the ERP investment and explain why it is imperative that the organization should implement ERP.

The second section ERP and Technology gives an overview of the technology that are related to ERP and are necessary to improve the capacities of the ERP system and that help in transforming discussed include business intelligence (BI), E-Business and E-Commerce, BPR, Data warehousing, Data Mining line analytical processing (OLAP), Product Life Cycle Management (PLCM), Supply Chain Management (SCM) & Customer Relationship Management (CRM).

The section three deals with the ERP implementation issues. Some of the topics that are discussed are package selection, implementation lifecycle, implementation methodologies, implementation costs, and implementation team, role of vendor and consultants, contracts with vendors and consultants and so on. It also discusses the factors that determine success and failure of the ERP system.

The fourth section ERP in Action deals with the post implementation scenario.

The section five deals with the major modules in an ERP package and how each module functions. The sixth section is about the ERP market place and the major players in the ERP market. The seventh section deals with the technological advancement that will change the nature of today ERP packages. This section includes topics like turbo charging the ERP system, enterprise integration application (EIA) ERP and E-Business, ERP, Internet and WWW, ERP and Total Quality Management and future direction and trends [9].

C.Anikhindi A. G. (1995):

He conducted study of computerized cost based Information system for decision making in selected organizations from Kolhapur district. Researcher selected four sector viz. private, public, service and cooperative. He concluded private organizations are using computer based information system and others are lagging behind in this regard. Researcher has suggested model for computer based information system and observed benefits of computer based information system in private organization are Reduction in cost and product life cycle, Inventory control, Optimum utilization of capacity and Decision making is more effective[11].

D.Suzanne Beaumaster (1999):

He carried out research study on Information Technology Implementation Issues: An Analysis. This research project addresses the issues affecting information technology development and deployment. The research in this study suggests that there are three primary results, which are shown here. The first is that—strategic planning for IT is fundamental to the ultimate effectiveness of IT implementation. Planning with regard to IT acquisition and deployment has proven to be a difficult accomplishment regardless of organization type or sector. This study specifically addresses many of the issues surrounding this problem, as it is integral to the implementation process as a whole.

Secondly, it is shown that interdepartmental coordination has proven to be a major factor in effective IT implementation. Previous studies in this area have shown a propensity over the course of the development of IT towards decentralization of the acquisition and management of technologies. This trend speaks directly to the issue of interdepartmental coordination and the difficulties local government managers face when attempting to implement ITs in their organizations. Finally, it is shown that the expertise levels of executives with regard to IT have proven to be a contributing factor to effectiveness of the IT development and deployment process [13].

E.Patil Yashwant S. (2001):

He carried out research study on Computerized Management Information Systems for Sugar Cooperatives in Maharashtra State. The research exposes that, the computerization of three sugar factories in particular and of the 7 sugar factories in general. It is observed that the computerization in sugar cooperatives is in first stage. The study also exposes hurdles before the cooperative sugar factories for computerization. The researcher has identified many hurdles and main hurdles include Lack of support from the top level management, Lack of awareness of computerization and its benefits for effective and efficient Management, Non availability of computer qualified and experienced manpower locally, No separate provision for funds on the lines of other departmental budgets.

The researcher has suggested a need for systematic approach in computerization and its integration into various information systems, with the participation of top level personnel of the sugar factories and departmental heads. Besides, the

researcher has also made valuable suggestions for effective and efficient usage of computerization which includes formation of IT committee, networking of sugar cooperatives and other regulatory agencies for whole information flow [12].

F.Deshpande S.M. and Hapase D.G. (1992):

Presented case study of Dnyaneshwar SSK Ltd. on implementation of computerized harvesting program in DSTA conference. In this study, authors show the feasibility of computer in developing efficient harvesting program in order to improve sugar recovery from available sugarcane. Authors collected and analyzed data regarding to recovery before and after the computerization of harvesting program.

Also, authors expressed economic aspects of computer based harvesting program and considered benefits of Computer based harvesting schedule are as follows:-

- 1) Definite rise in recovery was observed.
- 2) Farmer knows it clearly when his sugarcane will be harvested.
- 3) All possible harvesting information is really available which improves working efficiency.
- 4) Manager requirement for the data analysis is very less as compared to the manual process.[18]

G.Jaiswal M.P. and Singh N.P. (1993):

Presented research paper, titled 'Information Technology Network in Co-operative Management' in second state level sugar conference. This paper broadly classified areas of computerization in sugar co-operatives in two, one is factory automation and the second one is transaction processing and information systems with subsystems in each area. Study made a comparison of IT applications in three sugar co-operative units Viz. Ajinkyatara SSK Satara, Vasantdada SSSK Sangli and Yashwantrao SSK Theur. This paper provides the basic frame work for computerization of sugar co-operative in Maharashtra and a need for information sharing between the different co-operative sugar units and top organization[16].

H.Krishnamaraju A.V. (1989):

He discussed about how to utilize computer for better advantage to the Cane Management in his article. Also various activities of cane management function and identified requirement of Computerized Cane Management System. At end part of the paper author discussed benefits of computerized cane management & necessity of trained Computer Professional for design and developing Computer based applications[17].

I.Acharya G.N. and Balwe T.K. (1993):

Presented paper in the second state level sugar conference at Malegaon Tal Baramati Dist. Pune. In the paper authors identified different areas of computerization and suggested phased program for computerization and infrastructure for computerization. Also discussed about the various software modules developed by VSI and observations and result of maturity wise harvesting module implemented in Dnyaneshwar Sahakari Sakhar Karkhana Ltd. Dnyaneshwarnagr (Dist. Ahmednagar). [19]

J.Saxena A.K., Kumar Gyanendra and Singh S.L. (1998):

Presented paper in S.T.A.I annual conference on 'Process Computers for Sugar Industry'. In this paper, author underlined a need of Microcomputer based distributed digital control system in spite of conventional instrumentation. Also explained features of computer based control systems and criteria for selection of process for implementation of computer controlled system. The different areas identified by authors to implement computer controlled process are Boiler house, evaporation station, Pan Stored P_H control etc. At the end of paper, authors summarized resulting advantages of computer based distributed digital control systems implemented in private sugar factories in Tamilnadu[20].

K. Munkyold B. E. (1999):

Published research article on "Challenges of IT implementation for supporting collaboration in distributed organizations" in European Journal of Information system. In this article author designed and developed six case studies of IT implementation projects, focusing on the challenges in the implementation process as seen from the perspective of the implementation team. The study is an exploratory nature; the study has identified a large number of issues that have influenced the different stages in the implementation process [15].

L. Deshmukh Pratap (2002):

Deliver seminar on 'Atomization in Sugar Industry'. In this seminar author highlights importance of atomization. He explains advantages of atomization, details of section wise atomization required for sugar plant. Also he explains results achieved in some plants like Juice Mass Flow Metering system with stabilizer of M/s. Vittalraoshinde S.S.K. Ltd., Madha. Boiler Drum Level Control of M/s. Rana Sugars Ltd., Punjab. Combustion control & pan atomization of M/s. Chh. Shahu S.S.K

Ltd., Kagal. Condenser Atomization of M/s. Tatyasaheb Kore S.S.K. Ltd., Warana. Also author explain results of full sugar plant atomization these results will vary from plant to plant [23].

M. Balwe T.K. (2004):

Examined the designed and developed ERP software package known as VSI Sugar ERP for Indian sugar Industry. Author discussed in detail features of package, advantages, required infrastructure, implementation process and experiences of sugar factories who have implemented VSI Sugar ERP. It is a software package aimed to prove an integrated, low cost, software solution for sugar and allied industry with full and assured maintenance backup. The expected benefit of the package as expressed by the author are the availability of relevant information, low cost of production, efficient and smooth working of whole setup and profitable business. The salient features of VSI sugar ERP are user friendly, Easy and flexible for implementation and customization, ensured security rights wherever and whenever required and adoptable to need based modifications for additional development. The author highlighted the necessary of this package to the sugar industries so as to bring a transformation in the operations of the sugar cooperative industries [22].

III. OBJECTIVE OF THE STUDY

The objective of this study is to explore the IT implementation research in one of the sugar factories. Research work is initiated by identifying the problems in computerization, technology and trained staff implementation in the sugar industry. The following objectives are set while conducting the research:

- 1) To study the present Information system of sugar factory.
- 2) To find the problems of IT implementation in sugar factory.
- 3) To give the suggestions to overcome the problem for IT implementation in selected sugar factory.

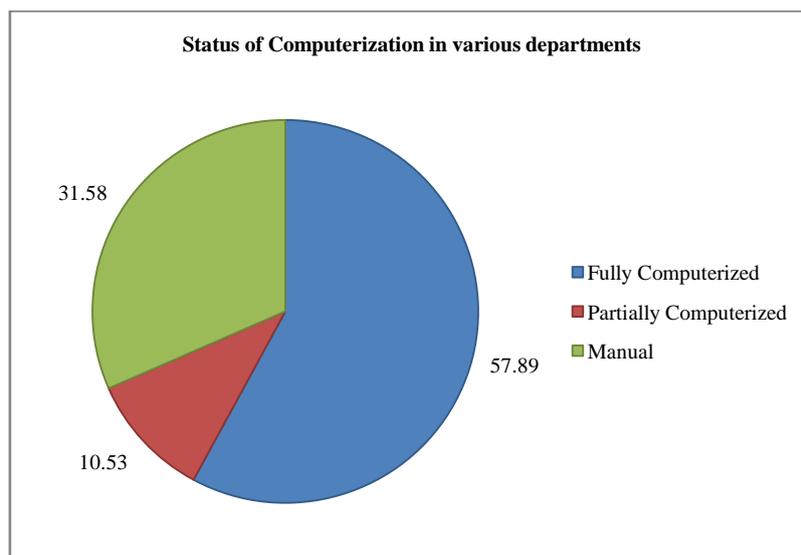
IV. METHODOLOGY & SAMPLING

The research undertaken is based on a systematic collection, analysis, interpretation and reporting of data related to Sonhira Sahakari Sakhar Karkhana Ltd; Vangi. (District- Sangli of Maharashtra). This study is undertaken during 2009-2012. Various departments of Sonhira sugar factory had been taken as sample for study. The study is descriptive case study type of research. The data is to be collected to investigator by questionnaire & survey methodology. Simple statistical tools viz. tabulation; percentages have been used to analyze data. Rank has been used to find out Problem occurrences for implementing IT.

V. DATA ANALYSIS AND INTERPRETATION

(All charts show percentage to the total samples, percentage figures in the parentheses total samples.)

Chart A. Status of Computerization in various departments



From the above chart it is observed that the status of computerization in various departments.

The General department has three sub departments. In this department only one (33.33%) department is fully computerized. The remaining two (66.67%) departments are working manually and there is no any unit is partially computerization.

The Finance department has eight sub departments. In this department six (75%) departments are fully computerized. The remaining one (12.5%) department is partially computerized and also one (12.5%) department is working manually.

The Agriculture department has four sub departments. In this department three (75%) departments are fully computerized. The remaining one (25%) department is partially computerized.

The HRM department has four sub departments. In this department three (75%) departments are fully computerized. The remaining one (25%) department is partially computerized.

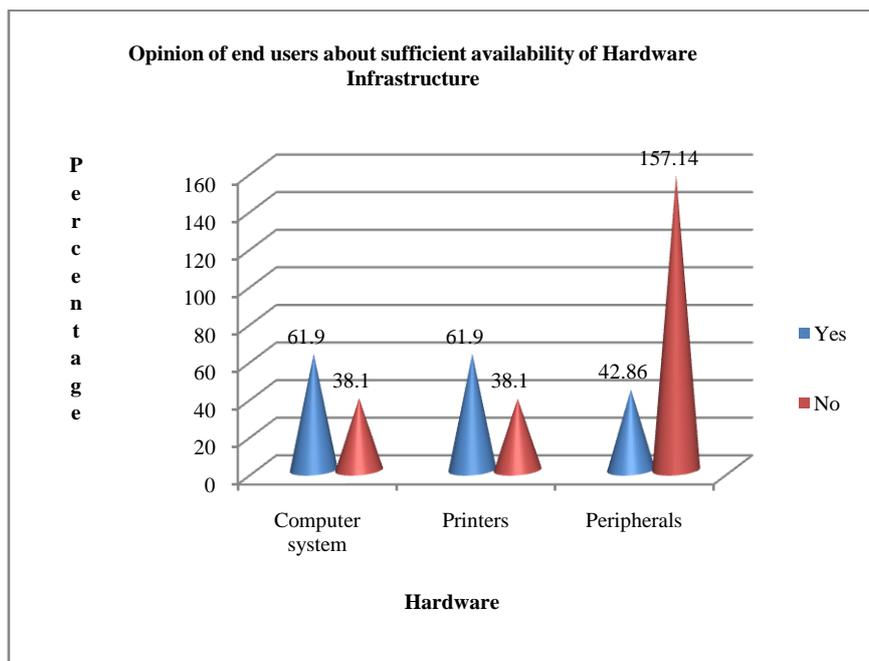
The Engineering & Manufacturing department has nine sub departments. In this department four (44.44%) departments fully computerized. One (11.12%) department is partially computerized. The remaining four (44.44%) departments are working manually.

Purchase and Store has four sub departments. In this department three (75%) department are fully computerized. The remaining one (25%) department is works manually.

The Civil & E.T.P. (Effluent treatment plant) departments are not computerized i.e.100% work is done manually. The Distillery & Co-Generation departments are fully computerized i.e. 100% work is computerized. The vehicle department is partially computerized.

It has been concluded from the above interpretation is that the majority of works are fully computerized i.e.57.89% in overall departments. 31.58% work is done manually in overall departments, and few i.e. 10.53% of work is done partially in overall departments.

Chart B. Opinion of end users about sufficient availability of Hardware Infrastructure

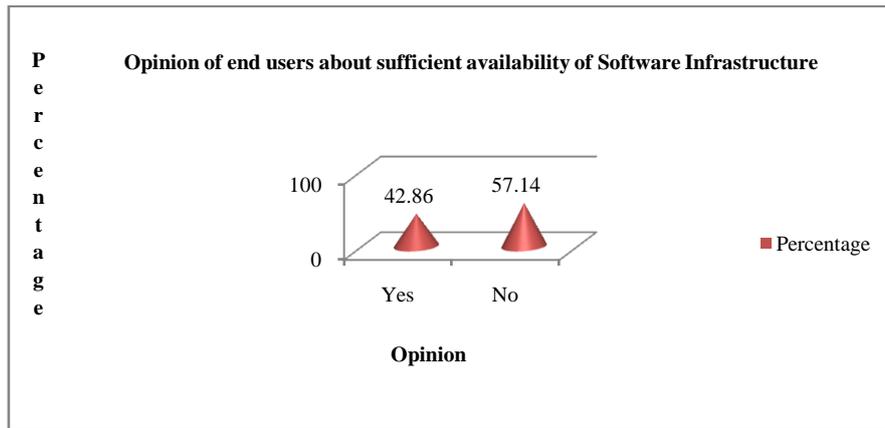


Information delivered by the above chart is about the opinions of the end users about sufficient availability of Hardware Infrastructure. Majority of respondents (61.90%) expressed that sufficient availability of Computer System and Printers. 38.10% of the respondents expressed that not sufficient availability of Computer System and printers.

Majority of respondents (57.14%) expressed not sufficient availability of peripherals. 42.86% of respondents express available sufficient peripherals.

It is clear from above information that most of the end users are agreeing there is not sufficient availability of peripherals.

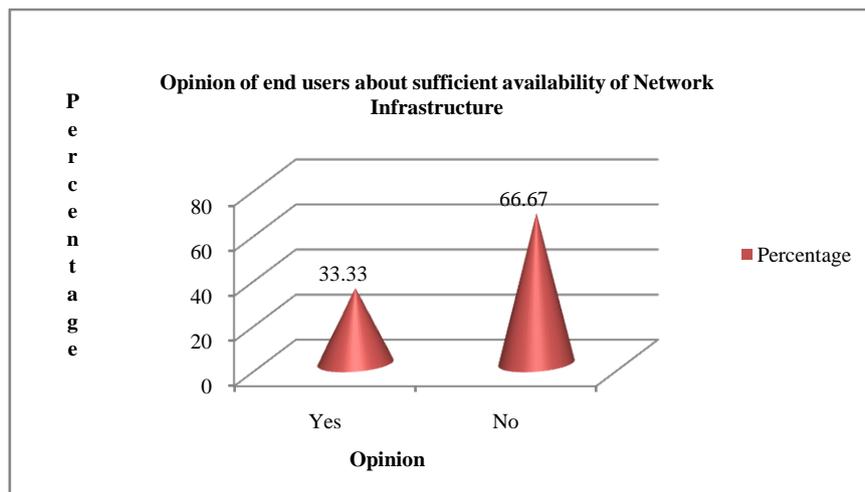
Chart C. Opinion of end users about sufficient availability of Software Infrastructure:



Information delivered by the above chart is about opinions of the end users about sufficient availability of software Infrastructure. Majority of respondents (57.14%) express that not sufficient availability of software infrastructure and (42.86%) of the respondent express that available sufficient software infrastructure.

It is clear from above information that most of the end users are agree in present IT Implementation not sufficient availability of software infrastructure. It is also observed that most of the respondents require new versions of software.

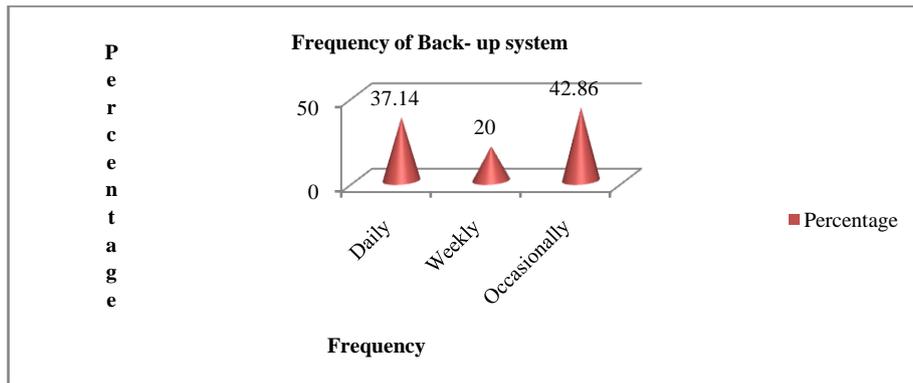
Chart D. Opinion of end users about sufficient availability of Network Infrastructure:



Information delivered by the above chart is about opinions of the end users about sufficient availability of Network Infrastructure. Majority of the respondents (66.67%) express that not available sufficient network infrastructure and (33.33%) of the respondent express that available sufficient Network Infrastructure. It is clear from above information that most of the end users are agree in present IT Implementation not sufficient availability of networking infrastructure.

Chart E. Frequency of Back-up System

For protection from natural and artificial threats, database Backup is taken. It is observed that the end users use pen drive, compact disks, magnetic tapes and mirroring and duplexing server for Back-up.

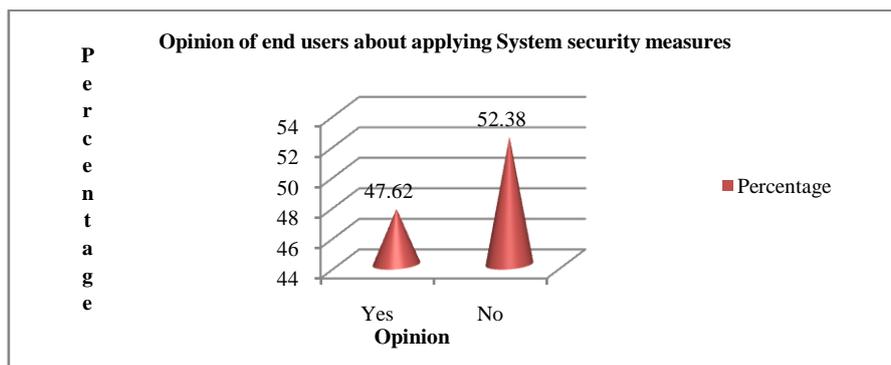


From the above chart it is observed that frequency of Back-up system. Majority of respondents (42.86%) express that they take Back-up occasionally. Some of the respondents (37.14%) express that they take daily Back-up. 20% respondents express that they take Back-up weekly.

So from the above information it is concluding that the majority of the respondent takes daily Back-up.

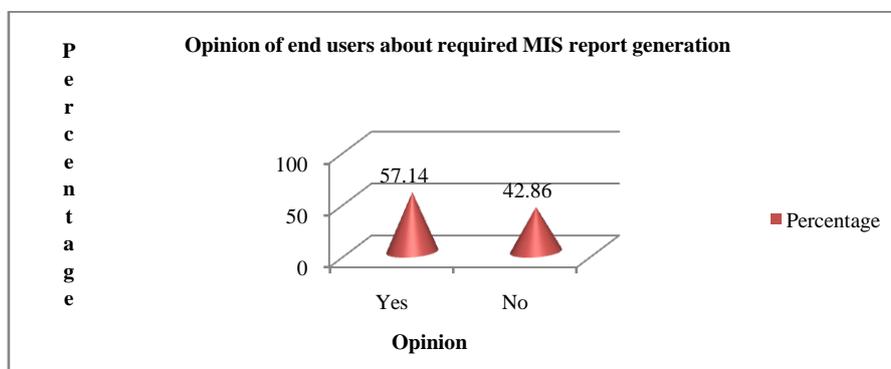
Chart F. Opinion of end users about applying system security measures

For protected from different security threats, various types of security measures are applied. The security measures like Physical access controls, software and database access control, network access control, and antivirus. These controls protect data from viruses, unauthorized access and theft of data.



From the chart it is observed that majority of respondents (52.38%) express that not apply security measures and (47.62%) respondents express that apply security measures. So from this information it is conclude that majority of the respondents express that not apply security measures for protecting data.

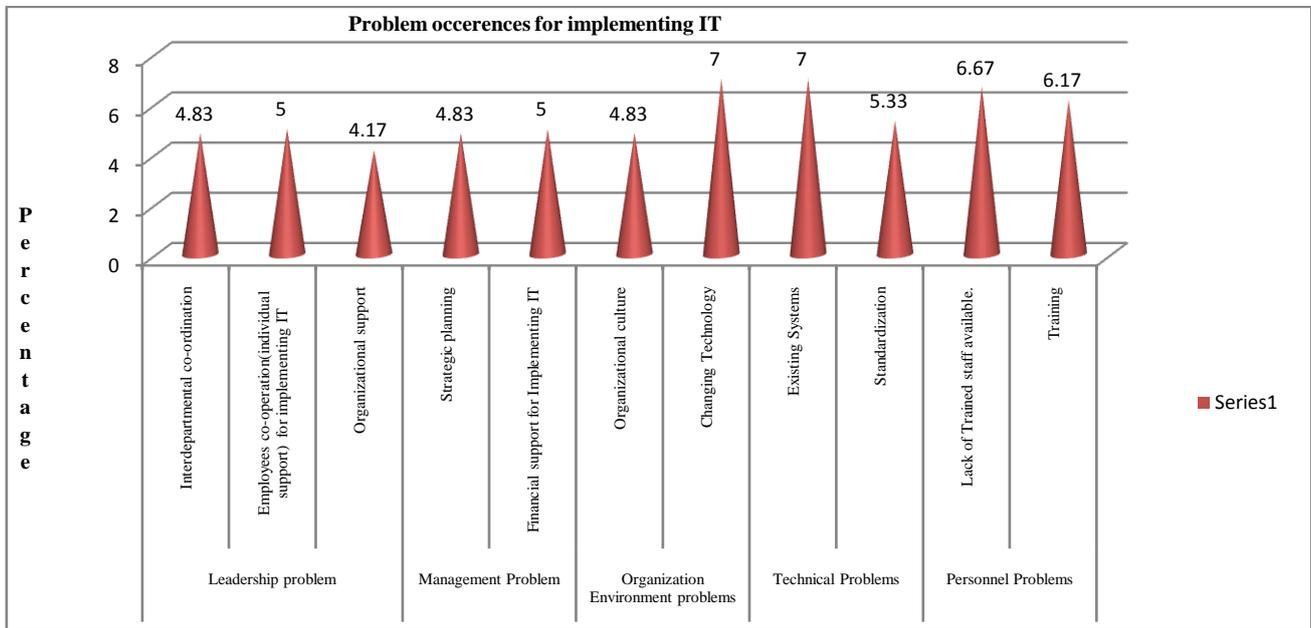
Chart G. Opinion of end users about required MIS report generation



From the chart is observed that majority of respondents (57.14%) expressed that MIS reports are generated as per user requirement in a given system. 42.86% of the respondents expressed that MIS reports are not generated as per user requirement in a given system.

So from above graph it is conclude that MIS reports are generated as per requirement.

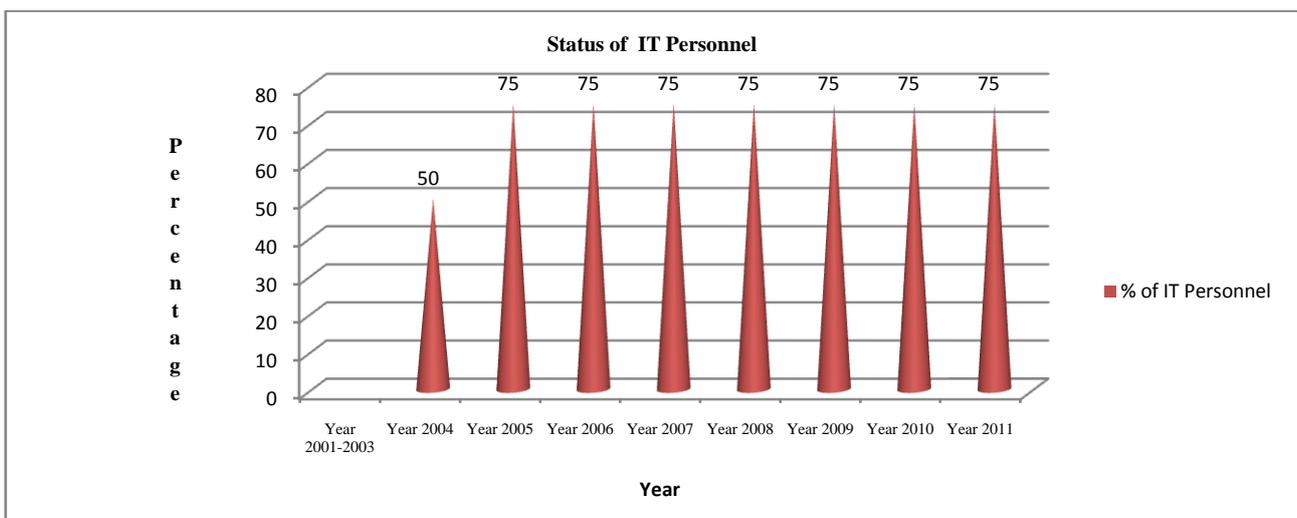
Chart H. Problem occurrences for implementing IT



The above chart furnishes the information about problem occurrences for implementing IT. According to these respondents changing technology & existing system as they rank 1st. Lack of trained staff available, Standardization, and training type of problems as they rank 2nd, 3rd, and 4th rank respectively. Financial support for implementing IT and employees co-operation for implementing IT as they rank 5th given. Whereas organizational culture, strategic planning, and Interdepartmental co-ordination as they rank 6th. The leadership problem like organizational support as they rank 7th given.

So from above fig. it has been conclude that Technical problem i.e. Existing system, organization Environment problem i.e. Changing Technology and Personnel problem i.e. Lack of Trained staff available and training are very problematic for implementing IT.

Chart I. Status of IT Personnel



The above chart furnishes the information about IT Personnel. There is percentage calculate on the basis of expert IT personnel i.e. Availability of EDP Manager and Software Programmer.

In Year 2001-2003 there is one hardware Engineer and four Computer operators present there is no EDP manager and Software Programmers available. In Year 2004 there is one EDP Manager and 6 Computer operators present i.e. the % of IT Expert Personnel is 50%. In Year 2005-2011 there is one EDP Manager, one programmer, and 8 Computer operators are present.

So from the above graph it is conclude that as a norm there is one EDP manager and two programmers required but in this sugar factory there is one programmer and one EDP manager. So Inadequate IT Personnel is available.

VI. SUGGESTIONS

From the above discussion in detail, a few recommendations have been thought of which also find support from the readings of researcher, appended here. Existing IT infrastructure suffering from many problems like old technology, DOS based operating system, network infrastructure, technical staff, training given to the technical staff; MIS report generation as per user requirements, Allocation of resources etc. To eliminate these problems there is a wide scope for implementing IT.

Hence, It is suggested that to use ERP software. In the age of Information Technology use of computer in sugar factory is expected. IT implementation is essential in sugar factory for reducing the cost of production and improving efficiency. Sugar factory also face problems for availability of good quality application software also the computerization is done by converting the existing procedures into computer procedures. So there is need for adopting a method of effective planning of all resources in the sugar factory. This method is known as Enterprise Resource Planning (ERP) which includes all possible resources for organization namely manpower, money, material etc. ERP covers techniques and concepts responsible to improve the efficiency of an organization. So they should prepare where they implement ERP. There is a need to follow a scientific approach for selecting hardware and software as well as network infrastructure with the help of experts. There is need to reengineering because the old technology has its own limitations. There is a need to change employee mindset focus on IT. Also in this organization inadequate technical staff so need to recruit trained staff on the basis of structure decided by Maharashtra Rajya Sahakari Sakhar Karkhana Sangh Ltd. Mumbai. Regular training is given to the technical staff and MIS reports are generated as per user requirements.

VII. CONCLUSION

It is concluded that, managements have to make strategic planning quickly. Today's world demands IT Implementation wherever possible. Existing system is unavoidable. Management must take decision to implement ERP Software. And for ERP Software management needs good infrastructure including computer hardware and software, people who know procedures and trained end- users etc. There must have a Local Area network(LAN) in their premises for computerized coordination, multiuser facility, good quality application software is a must, improvements in old procedures, selection of equipment is good, and require trained manpower. The study carried out on Sonhira Sahakari Sakhar Karkhana indicates that there is need to install standardized software solution.

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REFERENCES

- [1] D.S. Yadav "Foundation of Information Technology", Revised Second Edition, New Age International (P) Ltd., Publication, New Delhi, 2005.
- [2] Turban, McLean, Wetherbe, "Information Technology for Management Transforming Organization in the Digital Economy", Revised Fourth Edition, John Wily & Sons Ltd., U.K., Publisher, New Delhi, 2007.
- [3] Turban, Rainer & Potter, "Introduction to Information technology", Revised Second Edition, John Willey & sons Ltd., U.K., Publisher, New Delhi.
- [4] C. R. Kothari, "Research Methodology Methods and Techniques", Reprinted Second revised Edition, New Age International (P) Ltd., publishers, 2007.

- [5] Ward John, "Principals of Information Systems Management", New York, NY: Routledge, 1995.
- [6] Ajoy Kumar Ray and Tinku Acharya, "Information Technology", Second Edition, Prentice-hall of India Private Ltd., 2004.
- [7] Efraim Turban, Ephraim Mclean and James Wetherbe, "Information Technology for Management", 4th Edition, Wiley India Pvt. Ltd., 2007.
- [8] Carroll W Frenzel and John C Frenzel, "Management of Information Technology", Fourth Edition, Thomson Asia Pte. Ltd., 2004.
- [9] Alexis Leon, "ERP Demystified", 2nd Edition, Tata McGraw-Hill Co. Ltd, 2007.
- [10] Narendrasinh Chauhan, "Information Technology for Agriculture development in India".
- [11] A G Anikhindi, "A study of computerized cost based information system for decision making in selected organization", Ph.D. Thesis, Shivaji University, 1995, Unpublished.
- [12] Yashwant S Patil, "Computerized Management Information Systems for Sugar Cooperatives in Maharashtra", Ph. D. Thesis, University of Poona, 2001, Unpublished.
- [13] Suzanne Beaumaster, "Information Technology Implementation Issues: An Analysis" Ph.D. thesis in Public Administration and Public Policy, State University, 1999.
- [14] McFarlan, F. Warren, and McKenny, James L. (1983), "Corporate Information Systems Management: The Issues Facing Senior Executives. Homewood, IL: Richard D. Irwin".
- [15] Munkyold B E, "Challenges of IT implementation for supporting collaboration in distributed organizations", *European Journal of Information Systems*, Volume 8, Number 4, 1 December 1999, pp. 260-272(13).
- [16] Jaiswal M.P and Singh N.P. second state level sugar conference, Malegaon July 4-5, 1993, ' conference proceeding page No.4.1 to 4.15.
- [17] Krishnamaraju A.V, Sept 89, Vol. 21, No 9 Co-operative Sugar Page No.19 to 23.
- [18] Deshpande S.M and Hapase D.G, State Level DSTA workshop proceedings-1992, "A case study of DSSK Ltd of Computerization of harvesting program" Page :A79-A-98.
- [19] Acharya G.N & Balwae T.K second state level sugar conference, Malegaon July 4-5, 1993, ' Conference Proceeding page No.4.17 to 4.24.
- [20] Saxena A.K, Kumar Gyanendra and Singh S.L, STAI Annual Conference Proceedings 1998, Page No. 33 to 35.
- [21] K. Saxena, S.L. Singh, (1996), "Process Computers for Sugar Industry", proceedings of STAI Conference Kanpur U.P.
- [22] T.K. Balwe (2004), Proceedings of State level conference on "Cooperative Sugar Industry in Maharashtra: Past, Present and Future" seminar held at Pune.
- [23] Pratap Deshmukh, "Automation in sugar industry", Deliver Seminar in The Deccan sugar Technologists' association (India).
- [24] http://en.wikipedia.org/wiki/Information_technology
- [25] <http://www.vsisugar.com>.
- [26] <http://www.iitk.ac.in/hss/research/thesis/Abstract/raismohamad.pdf>
- [27] <http://en.wikipedia.org/wiki/Sugar>
- [28] http://www.sboinformatics.com/design_thesis/sugarcane/sugarcane_introduction.pdf
- [29] <http://www.business.mapsofindia.com/sugar-industry>
- [30] <http://www.gov.mu/portal/sites/ncb/moa/farc/amas97/pdf/uom11.pdf>

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Annexure-1:**QUESTIONNAIRE****A: GENERAL INFORMATION:**

1. Name of factory _____
2. Name of founder _____
3. Address _____
4. Telephone no. _____ 5. Fax no. _____
6. Email ID _____ 7. Website: _____
8. Name of respondent _____
9. Designation _____
10. Year of establishment _____
12. No. of villages under operation _____
13. Capacity (TCD) _____

B. PRESENT STATUS OF INFORMATION TECHNOLOGY:

1. Whether your organization has implemented IT? Yes/No
If yes, please state the year of IT implementation _____
2. Does your organization have an in-house MIS, IT or Data processing department? Yes /No
3. Please state the present status of computerization in various departments in your organization.

Departments	Sub Departments	Fully Computerized	Partially Computerized	Manual
Generala	1.General Administrator 2.Watch and ward 3.Guset House			
Finance	1.Share Accounting 2.Cane Accounting 3.Harvesting Billing 4.Transport Billing 5.Deposit Accounting 6.Store Accounting & Costing 7.Financial Account 8.Sales (Sugar & By-Product)			
Agriculture	1.Cane Development & Planting 2.Harvesting 3.Weigh Bridge 4.Transport Scheduling			
Human Resources Management	1. selection & appointment 2. Attendance system 3. Payroll 4. Personnel Information system			
Engineering & Manufacturing	1. Laboratory 2. Plant Maintenance 3.Cane feeding 4 Juice Weighing 5. Boiler Atomization 6. Boiling House 7. PH. Control system 8. Plan atomization			

	9. Centrifugal atomization			
Purchase & Store	1. Inventory Management 2. Production Planning 3. Sugar Godown 4. Sugar weighing system			
Civil	1. Civil & Irrigation 2. Sanitation			
Distillery	1. Distillery Management			
Co-generation	1. Co-generation			
E.T.P	1. E.T.P. Management			
Vehicle	1. Vehicle Management			

4. Do you have sufficient availability of Software Infrastructure?

Yes [] No []

If No, Which Software's you required?

a. _____ b. _____
c. _____ d. _____

5. Do you have sufficient availability of network facility in your organization?

Yes [] No []

6. Do you have Internet connection? Yes/No

7. What is the frequency of Data Backup systems used for present computer system?

- a) Daily
- b) Weekly
- c) Occasionally

8. Is the security measures apply for data processing for computer system? Yes [] No []

9. Can your system generate required MIS reports? Yes/No

10. Are the following problems occurred for implementing IT.? (Please specify problematic, somewhat problematic and non-problematic)

Category of Problem	Sub Category of Problems	Problematic	Some What Problematic	Non Problematic
Leadership problem	Interdepartmental co-ordination			
	Employees co-operation (individual support) for implementing IT			
	Organizational support			
Management Problem	Strategic planning			
	Financial support for Implementing IT			
Organization Environment problems	Organizational culture			
	Changing Technology			
Technical	Existing Systems			

Problems	Standardization			
Personnel Problems	Lack of Trained staff available.			
	Training			

11. Please state the status of IT personnel

Manpower position	2003	2004	2005	2006	2007	2008	2009	2010	2011	Required
Computer / EDP Manager										
Software Programmer										
Computer Operator										
Hardware Engineer										
% of IT Personnel										

12. Is there in your organization implement ERP Software? Yes/No

If yes, which model is used _____ -

If no, are you interested to implement? Yes/No

13. Explain your ideas for overcoming problems for further development.
