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CONTENTS

Governance Of IT In Co-operative Sugar Industries In India – An Immense Need

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ABSTRACT

Information Technology has become an essential ingredient of any business organization in the present global scenario. The organizations which are cooperative in nature and dealing with production and marketing of sugar also need IT enabled technologies. It has been observed by researcher that a very few cooperative sugar organizations have implemented IT enabled technologies to run their business but there too implementation is being done in a haphazard manner. Therefore implementation of IT is not as effective as it should be. In fact implementation is not everything all but its perfect governance is a must to get the optimum benefits of IT enabled modern technologies. For getting real fruits of IT, proper IT governance is required. This article tries to highlight importance of IT governance, obstacles in IT governance and implementation framework for IT governance in co-operative sugar industry in Maharashtra.

Key Words: IT-Information Technology, COBIT- Controlled Objectives for Information and Related Technologies.

About Cooperative Sugar Industry

The beauty of the rural co-operative movement is that, this big establishment of hundreds of crores of rupees is owned by semiliterate and poor farmers. Democratic system is adopted to run their business functions. Board of Directors is elected after every five years amongst their General Body members with a view to keep control on the functioning. They elect Board of Directors and run the organization. But now-a-days the co-operative industries are suffering from many problems which are

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related to management. The ignorance of the framers, lack of transparency in the management and slow processing of information lead to losses, corruption and misappropriation of funds.

The co-operative sugar factories are not only income generating or sugar producing establishments, but they are amongst one of the biggest employers. At present, 175 sugar factories are registered in Maharashatra state out of which more than 95% factories are co-operative sugar factories and are situated in Western Maharashatra, Marathwada and Vidharbha. These factories are directly related to livelihood of 30 million farmers, 1.7 million employees and 5 million laborers in Maharashatra. The co-operative dairy industry is related to sugar industry, as the green fodder is mainly generated from sugarcane leaves & residues. Even the industries producing chemical fertilizers are depending on sugarcane growers. Therefore the progress of rural Maharashatra depends upon progress of sugar co-operatives. In the era of globalization and liberalization, all industries in private sector have improvised their management system through Information Technology and they have improved their performance. But the co-operative sector is lagging behind in this regard. Hence it is national and social need that the management of these co-operatives should be improved using Information Technology. Of course, many suggestions and solutions have come forward for the automation of sugar industry, but due to lack of requisite research and investigation no solution could solve many of the problems and they remained as they were in the cooperative sugar industry.

Present Computerization in Sugar Cooperatives

Presently some of the sugar factories have adopted modular approach for computerization, but it does not fulfill competitive requirement of the industry. Information Technology is revolutionizing the way in which we live and work. It is changing all aspects of our life. The digital revolution has given to the mankind, the ability to treat information with mathematical precision to transmit it with very high accuracy and to manipulate it at will. Computers and Communication system are becoming integral parts of each and every industry.

IT Governance

Weill and Ross define IT governance as "Specifying the decision rights and accountability framework to encourage desirable behaviour in the use of IT."[5]

The IT Governance Institute expands the definition to include foundational mechanisms: "... *the leadership and organisational structures and processes that ensure that the organisation's IT sustains and extends the organisation's strategies and objectives.*"[6]

IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organization structures and processes. IT governance is increasingly gaining attention in the business and IT arena. IT governance can be defined as the organizational capacity exercised by the board, executive and IT management to control the formulation and implementation of IT strategy and ensure the fusion of business and IT. It is indicated that IT management is also involved in the governance process. However, a clear difference must be made between IT management & IT governance. IT management focuses on the daily effective and efficient supply of IT services and operations. IT governance, in turn, is much broader and concentrates on performing and transforming IT to meet present and future demands of the business and customers. To implement IT governance in practice, an IT governance framework can be deployed consisting of a mixture of various structures, processes and relational mechanisms. While designing IT governance, it is important to recognize that it is contingent upon a variety of sometimes conflicting internal and external factors. Therefore, selecting the right mechanisms is a complex process and what works for one organization may not necessarily work for another, even if they work in the same sector. Summing up, IT governance is concerned with objectives that focus on alignment of IT with business, value and benefits of IT, management of risks associated with IT and performance measures for IT services.

Scope of IT Governance in sugar cooperatives as shown in Figure No.1,(Annex.II) includes.

Alignment of IT with the enterprise and realization of promised benefits.

1) Use of IT to enable the enterprise to exploit opportunities and maximize benefits
2) Responsible use of IT resources
3) Appropriate management of IT related risks.

Need of IT Governance

At present sugar industries are implementing IT applications in different areas but these industries are not getting due benefits of IT due to improper governance of IT. At present, following are the obstacles to IT governance in sugar industry.

- Top management does not emphasize IT
- Shirking the responsibility by the concerned authorities.
- Poor strategic alignment
- Ineffective resource management.
- IT staffing problem
- No review on IT performance
- Security & Privacy incidents
- Lack of Training & Development activity in IT area.

Leveraging IT successfully to transform the enterprise and create value added products and services has become a universal business competency. IT is fundamental for managing enterprise resources, dealing with suppliers and customers, and enabling increasingly global and dematerialized transactions. IT is also a key for recording and disseminating business knowledge. Good governance of IT, is therefore, critical in supporting and enabling enterprise goals. While IT is fundamental to sustain what may not be lucrative enough and taken-for granted business operations, it is equally essential to innovate and grow the business. IT carries varied risks also. It is clear that in these days of doing business at global level around the clock, system and network downtime has become far too costly for any enterprise to afford. In some industries, IT is a necessary competitive resource to differentiate and provide a competitive advantage while in many others it determines survival, not just prosperity.

IT is now so intrinsic and pervasive within enterprises that governance needs to pay

special attention to IT, reviewing how strongly the enterprise relies on IT and how critical IT is for the execution of the business strategy, because:

IT is critical in supporting and enabling enterprise goals.

IT is strategic to the business (growth and innovation).

Due diligence is increasingly required relative to the IT implications of mergers and acquisitions.

Business process transformation is very difficult without adequate IT governance. IT governance is essential to mitigate IT related risks and avoid project failure. Ineffective IT governance is likely to be a root cause of the negative results many sugar factories have already had with IT:

Business losses, ill reputations or weakened competitive positions

Deadlines not met, costs higher than expected and quality lower than anticipated

Enterprise efficiency and core processes negatively affected by poor quality of IT deliverables.

Failures of IT initiatives to bring innovation or deliver the promised benefits.

Areas of IT implementation in Cooperative Sugar Industry

a) Financial Management
- Financial Accounting
- Sugar cane Billing
- Harvesters & Transporters Billing
- Sales Billing & Management
- Deposits Accounting
- Store Accounting & Costing

b) Human Resource Management
- Manpower Planning, Recruitment & Placement
- Attendance & Compensation Management
- Personnel Information System
- Training & Development

c) Agriculture
- Cane Plantation planning & development
- Sugar Cane Harvesting & transportation planning
- Cane Weighing

d) Production

- Production Planning & Control
- Materials Management
- Plant maintenance
- Process Automation
- Quality Assurance & Quality Control

e) Sugar & Byproduct Marketing

f) Byproduct Units

IT Governance for Cooperative Sugar Factories

What Does IT Governance Cover

Fundamentally, IT governance is concerned with two things: IT" delivery of value to the business and mitigation of IT risks. The first is driven by strategic alignment of IT with the business. The second is driven by embedding accountability into the enterprise. Both need to be supported by adequate resources and measured to ensure that the results are obtained. This leads to the five main focus areas for IT governance, all driven by stakeholder value. Two of them are outcomes: value delivery and risk management. Three of them are drivers: strategic alignment, resource management and performance measurement.(Fig. No.2)

Each cooperative sugar factory operates in an environment that is influenced by

- Stakeholder values (stakeholders are members, suppliers, government, financial institutions)
- The Community
- Policies, Rules and Regulation of Govt. and applicable laws.
- Cooperative practices

Focus Areas Proposed for IT Governance

Following are the focus areas proposed for implementation of IT governance

- IT strategic Alignment
- Value Delivery
- Resource Management
- Risk Management
- Performance Measurement

a) IT Strategic Alignment

Business strategy of sugar factory is driven by stake holders' value drivers. Different stakeholders have different expectations from sugar industry.

- Sugar cane supplier members require higher rates for sugarcane,
- Employees require more earnings & stability,
- Raw material suppliers expect timely payment,
- Customers require quality sugar at fair prices,
- Bankers require timely return of interest and premiums of loans,
- Government is interested in timely collection of taxes and duties.

For achieving organizational goals as per organization strategy there is need of aligning IT strategy with business strategy. For IT governance alignment encompasses more than strategic integration between the (future) IT organization and the (future) enterprise organization. It also is about whether IT operations are aligned with the current enterprise operations.(Figure No.3)

The current business concerns and issues where IT has a significant influence are:
- Cost reduction,
- Inventory Management,
- Production,
- Marketing of sugar & byproducts,
- Merger/acquisition,
- Availability of sugar cane etc.

Aligning is achieved within the structure of the organizations annual planning and budgeting process through the transparency of the value vs. cost propositions. For this following things are done-
- Ownership of IT governance assigned to Board of Directors & Managing Director
- Formation of IT Strategy Committee and IT Steering Committee with responsibility for Communicating IT issues between the Board and Management. (Objectives & Responsibilities of Committees are given in Annexure –I)
- Formation of Risk Management Committees
- IT functions are aligned with Business Strategy
- Definition of IT strategy map

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- Considering costs for current & future technologies, risks & benefits of IT to organization are analyzed.
- Selection of management framework for IT governance

b) Value Delivery

The basic principles of IT value are the on-time and within-budget delivery of appropriate quality, which achieves the benefits that were promised. In business terms, this is often translated into: competitive advantage, elapsed time for order/service fulfillment, customer satisfaction, customer wait time, employee productivity and profitability. Several of these elements are either subjective or difficult to measure, something all stakeholders need to understand. Often, top management and boards fear to start major IT investments because of the size of investment and the uncertainty of the outcome. For effective IT value delivery to be achieved, both the actual costs and the return on investment need to be managed.

Value delivery is ensured through co responsibility with IT implementation project leader and on governance through direct accountability to the IT governance steering committee.

Method/Tools to be used:

- CMM Model
- COBIT (Controlled Objectives for Information & Related Technology)

c) Resource Management

Resource management is the most direct and controllable leverage point to ensure the delivery of our financial targets and is the focus of active management approach. IT governance committee controls on following

- Investment , use and allocation of IT resources(people, applications, technology, facilities ,data) and capabilities in serving the needs of the enterprise
- Optimizing knowledge and the IT infrastructure

d) Risk Management

The universal need to demonstrate good enterprise governance to shareholders and customers is the driver for increased risk management activities in large organisations. Enterprise risk comes in many varieties, not only financial risk. Regulators are specifically concerned about operational and systemic risk, within

which technology risk and information security issues are prominent.

Risk management is approached by selecting an acceptable risk level based upon the detailed assessments of exposures, probability of occurrence, compliance to legal or regulatory requirements and emerging good practice vs. the cost of mitigating the risk. Effective risk management begins with a clear understanding of appetite of the enterprise's for risk and a brainstorming session on the high-level risk exposures of the enterprise. This focuses on all risk management efforts and, in an IT context, affects future investments in technology, the extent to which IT assets are protected and the level of assurance required. Having defined risk appetite and identified risk exposure, strategies for managing risk can be set and responsibilities clarified. Dependent on the type of risk and its significance to the business, management and the board may choose to:

Mitigate—Implement controls (e.g., acquire and deploy security technology to Protect the IT infrastructure)

Transfer—Share risk with partners or transfer to insurance coverage

Accept—formally acknowledge that the risk exists and monitor it

For risk identification following are the considerations:

o Previous history and patterns of performance

o Current IT organizational factors

o Complexity and size/scope of the existing or planned IT environment

o Inherent vulnerability of the current and planned IT environment

o Nature of the IT initiatives being considered, e.g., new systems projects, outsourcing considerations, architectural changes

o IT manpower turnover

The different threats that arise from internal and external sources to the IT systems are considered and are shown in following table.

Source of Threat	Type	Examples
Natural Calamities	External	Earthquake, flood, fire, mud, gases,
Hardware Suppliers	External	Unreliable hardware, ineffective hardware, incompatible hardware, improper maintenance, lawsuits.

Software Suppliers	External	Erroneous software, ineffective software, poor documentation, improper maintenance, lawsuits.
Contractors	External	Erroneous software, ineffective software, improper hardware/software maintenance, untimely provision of services, disclosure of confidential information.
Other Resource Suppliers	External	Power outages, disruption to communication services, untimely provision of resources.
Competitors	External	Sabotage, espionage, lawsuits, financial distress through fair or unfair competition.
Debtor and equity holders	External	financial distress through foreclosure on claims.
Unions	External	Strikes, sabotage, harassment.
Government	External	Financial distress through onerous regulations.
Environmentalists	External	Harassment, unfavorable publicity.
Criminals/hackers	External	Theft, sabotage, espionage, extortion.
Management	Internal	Failure to provide resources, inadequate planning and control.
Employees	Internal	Errors, theft, fraud, sabotage, extortion, improper use of services.
Unreliable systems	Internal	Hardware failure, software failure, facilities failure

For controlling above threats to information system, different control measures are considered.

- Physical Access control Systems
- Audit Controls
- Encryption Techniques
- Remote Data Backup Systems
- Fire Protecting Systems
- Access control & Authentication Procedures
- Testing Controls

e) Performance Measurement

Performance measurement is an essential element of the management discipline to drive delivery, validate the effectiveness of business and information system strategy and to trigger management rewards based on factory performance and individual

contributions to its achievement. Performance measurement is done through the following activities

- Tracking project delivery and monitoring IT services
- Using balance score card that translates strategy into action to achieve goals measurable beyond conventional accounting system
- Measuring those relationships and knowledge based assets necessary to compete in the information age.
- Methods & Tools used for performance measurement are IT Balance Scorecard & COBIT.

Conclusion

Sugar sector in Maharashatra initiated computerization way back in late 1980's. However, most of the areas covered under computerization are at operational level. This has resulted in poor information management, which ultimately resulted in poor and irrelevant decisions at the top level leading to ineffective governance. IT governance is a very critical process; it needs to be implemented with right spirit with a high level of commitment from top management and stakeholders of sugar factory.

Adopting IT governance framework cooperative sugar factory will create the foundation for improved business efficiency, decision making and resulting into good governance. Therefore proposed IT governance will enable cooperative sugar sector for achieving greater heights both horizontally and vertically.

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Annexure I

Objectives & Responsibility of IT Strategy Committee

Purpose: To assist the board in governing and overseeing the enterprise's IT-related matters.

Member: Board Directors and Managing Director.

Goals: The committee needs to ensure that IT is a regular item on the board's agenda and that it is addressed in a structured manner. In addition, the committee must ensure that the board has the information it needs to make informed decisions that are essential to achieve the ultimate objectives of IT governance. Those objectives are:

The alignment of IT and the business

The delivery of value by IT to the business

The sourcing and use of IT resources

The management of IT-related risks

The measurement of IT performance

Responsibility

The committee needs to offer expert insight into and timely advice and direction on topics such as:

The relevance of the latest developments in IT from a business perspective

The alignment of IT with the business direction

The achievement of strategic IT objectives

The availability of suitable IT resources, skills and infrastructure to meet the strategic objectives of an organization.

Optimization of IT costs

The role and the value delivery of external IT sourcing

Risk, return and competitive aspects of IT investments

Progress on major IT projects

The contribution of IT to the business (i.e., delivering the promised business value)

Exposure to IT risks, including compliance risks

Annexure II -Figures

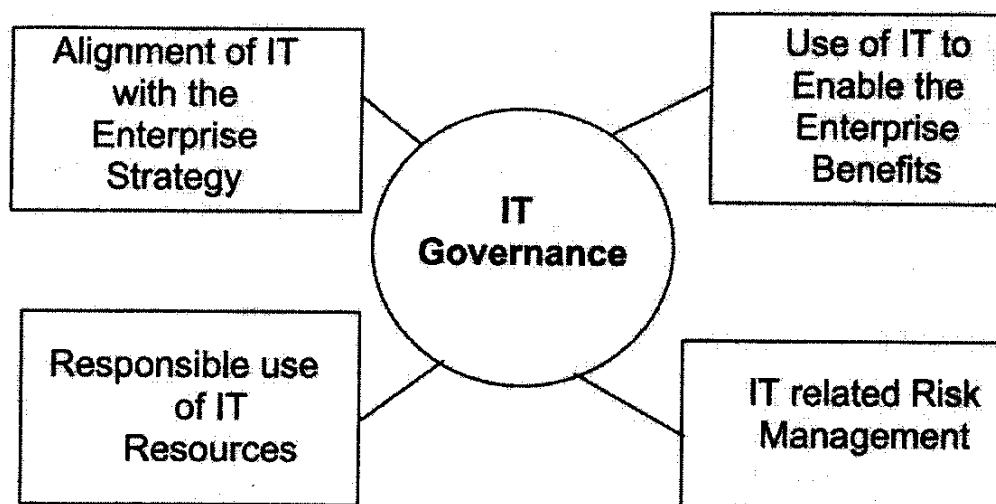**Figure No .1: Scope of IT Governance in Sugar Cooperatives**
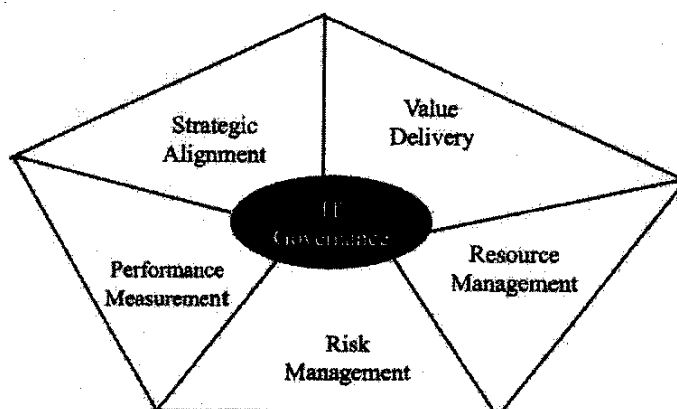

Figure No. 2: Areas Proposed for Implementation of IT governance in Sugar Cooperatives:

Figure No.3:IT/Enterprise Alignment:

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          ┌────────▶│  Enterprise  │◀─────────┐
          │         │   Strategy   │          │
          │         └──────────────┘          │
          │                                    ▼
┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│  Enterprise  │   │  Alignment   │   │      IT      │
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