

A High Level Coordination Committee on Financial Markets (HLCFM) had decided that the legal and policy framework for regulating the activities of credit rating agencies (CRAs) should be revisited in order to take a larger view of the entire policy with respect to banking, insurance and securities market'. Since this was a policy and multi regulatory issue, it was desired that Government should examine this issue involving all the regulators. The report was submitted to HLCFM on December 21, 2009 and SEBI has implemented all the recommendations made by the Committee. The measures implemented include:

- Mandatory half yearly internal audit for CRAs
- Requirement of prior approval of SEBI for changes in the status or constitution of CRAs
- Enhanced transparency and disclosure requirements for CRAs.

Conclusion

India being an emerging economy needs innovations and reforms in the financial market. Innovation and reforms not only add value in the existing technology and system but also lead to decrease in the cost of capital and mitigate the risk exposure of the capital market instruments. No doubt that there is a positive correlation between the finance and the economic growth of the country. Economic growth needs sound financial system which further requires the well developed financial market. So, if country wants constant economic growth it has to develop its financial market. Emerging economies like India depends heavily on the banking system for financing its capital needs. But banks which are highly protected in India hardly fulfill its funding requirements. Thus, there is the need to develop its capital market especially its bond market which is underdeveloped because of policies constraint. Also, India has a huge market for the infrastructure which requires huge funds. The creation of deep and innovative bond market can fill this gap. Steps have been taken up to develop the equity market but there is lots to be done in case of the bond market development. Reforms need to be initiated, bottlenecks need to be removed, policies need to be changed to deepen the bond market in India and make it as competitive as the world best bond markets. In pursuance recently the government of India announced the launching of its ambitious program "Make in India". The program is a comprehensive sincere effort with diversified motives for development of India. The program targeted to increase the share of manufacturing sector in the country's Gross Domestic Product from 16% to 25% by 2022 with a 100 million additional jobs in both urban as well as rural areas for enhancing the global competitiveness and sustainability in growth.

References

- Ansari, Mohd. Sharamin. 2011. Impact of Sub-Prime Crisis on India: An Empirical Analysis. In Proceeding of Global Financial Crisis: Issues, Concern and Challenges for India and Emerging Market Economies, 74-84.
- Sengupta, Arjun K. 2008. The financial crisis and the Indian response. The Hindu, October 24.
- Balakrishnan, Ajit. Brave new world of derivatives. Business Standard, November 11.
- BIS. 2006. Developing Corporate Bond Markets in Asia. BIS Papers 26. Basel: Bank for International Settlements
- BIS. 2002. The Development of Bond Markets in Emerging Economies. BIS Papers 11. Basel: Bank for International Settlements.
- Economy Survey. 2010-11. Financial Intermediation and Markets. Chap.5: 99-132

THE ROLE OF MIS IN PRODUCTION MANAGEMENT

Dr. Navneet Sharma
Ravi Kant Modi*

Abstract

The management information system (MIS) is an important tool in managing all the production related activities. The term MIS is widely used in production and operations industry for effective control. It uses variety of techniques of cost cutting, cost saving, time saving which can be used in reducing the time utilization in manufacturing a product. With the help of MIS, various production related tasks such as quality control, quality assessment, material control and other qualitative and quantitative aspects of a production houses performed in an efficient way. In this paper, all the aspects related to MIS, its use and importance with operations management are explained. The paper is written in a layman style so that a reader may get benefit by the aspects of MIS.

Keywords: Management Information System, Production Management, Operations Management.

Introduction

In today's globally business environment, where input costs are forever on the increase, most global companies are worried to decrease operations cost and to increase efficiency of the enterprise. Success of any business depends on how it is being run rather than what it is offering the market. To manage a business effectively, managers are responsible for making better decisions for which better information systems play important role. Now information systems are being used also in production and operations management covering product design, process design, strategic planning, PPC, TQM, MRP-I, MRP-II, shop floor planning, project planning, production technology, supply chain management, maintenance policy, materials management and inventory management. Use of information systems has resulted in better quality, improved efficiency, reducing costs and timely delivery.

Production as a System

When production is being looked from a system perspective, we may note that production system concept has three systems which are as follows:

- **Production System:** It is defined as a system whose function is to convert a set of inputs into a set of desired outputs.
- **Conversion Subsystem:** It is defined as a subsystem of the larger production system where inputs are converted into outputs.

* Assistant Professor, Department of CS and IT, The IIS University, Jaipur, Rajasthan.

** Assistant Professor, Department of EAFM (Commerce), L.B.S. P. G. College, Jaipur, Rajasthan.

- **Control Subsystem:** It is defined as a subsystem of the larger production system where a portion of the output is monitored for feedback signals to provide corrective action, if required.
- **Production system** requires inputs such as materials, personnel, utilities, capital and information. These inputs are transformed into outputs. Excluding of any such inputs will not satisfy production purpose. Output is accepted if it is acceptable in terms of quality, quantity, cost and time. When these parameters are not met, corrective actions and measuring decisions are needed in which accurate information plays most important role. Information provided by MIS plays supportive role in decision-making in production. These decisions are categorised as follows:
 - **Strategic Decisions:** This category involves production processes facility layout, production technology, long-term capacity planning, facility location, production technology, etc.
 - **Operating Decision:** This category involves decisions relatives to production planning systems, independent demand inventory systems, shop floor planning and controlling, materials management and resource requirements planning.
 - **Control Decisions:** This category involves decisions related with productivity, TOM, project planning, control techniques and maintenance management.
- MIS helps decision-makers in all these types of decisions. Information systems contribute to higher quality and higher productivity. Economic prosperity and greater standard of living of Japan is attributed to higher productivity and higher information technology.
- **Importance of MIS in Strategic Management**
- MIS, when used in strategic management for production and operations decisions, plays supportive role in following:
 - Identification, prioritisation and exploitation of opportunities.
 - Integrating the behaviors of individuals into a total effort.
 - Providing a basis for the classification of individual responsibilities.
 - Encouraging forward thinking.
 - Creating a framework for internal communication among personnel.
 - More effective allocation of time and resources to identified opportunities.
 - Minimising the reverse impacts of adverse conditions and changes.
 - Handling problems and tackling opportunities.
 - Better decisions to better support predetermined objectives.
 - Representing a framework for better coordination and control of activities.
- **Production Functions: Areas of Uses of Information System**
- Information systems are being used in following production functions:
 - Maintaining delivery schedules,
 - Total quality management (TQM),
 - Business process Re-engineering (BPPE),
 - Automation,
 - Effective grievance-handling,
 - Minimising inventory,
 - Checking absenteeism and misbehaviour,
 - Good housekeeping,
 - Maintaining accuracy and timeliness of MIS, and
 - Controlling overtime.

Operations Management and Information System

Operations management is generally used along with production management. It is defined as the process whereby resources or inputs are transformed into more useful products. The term operations management is more used for a system which produces intangible services. It covers such service organisations as airlines, banks, super bazaars, educational institutions, entertaining services, telecommunications, transportation, advertising savings and loans, broadcasting and so on. In the beginning computers were used for clerical duties but today computers are being used as DSS, expert systems and artificial intelligence. Managers now use computers and ARE tools for analysing problems and obtaining solutions. In India share of the services sector in the GDP is much higher than industry or agriculture. It has become possible through advanced technology in service sector. Therefore, manager should evolve strategies and decisions to ensure better productivity, quality and competitiveness.

Days are very near when customers will walk into an automobile dealership, arrange finance facilities through computer terminals and obtain the products only of their own liking. Information systems are being used in almost all service sectors. It is shown by diagram gives on previous page.

Input Transaction Documents in Production and Operations Management

- Production programme,
- Production schedule,
- Job card,
- Process planning sheet,
- Customer orders,
- Material requirement, requisition and storing,
- Breakdown advice,
- Job status advice, and
- Quality assurance rating form.
- **Decisions of Production and Operations Management**
- Product/Service design and development,
- Make or buy,
- Allocation of resources,
- Facility planning,
- Location and layout,
- Job scheduling and job planning,
- Technology selection,
- Rescheduling and loading of jobs,
- Selection of maintenance policies,
- Service facilities, and
- Business plans.

Forecasting In Production

Forecasting may be long range, intermediate range and short range. All types of forecasting need information inputs are given on next page in a diagram.

IS and Production Planning and Control

Carson, Bolz and young write, "The various activities involved in production/operations planning are designing the product, determining the equipment and capacity requirements, designing the layout of physical facilities and materials handling system, determining the sequence of operations and the nature of the operations to be performed along with time

requirements (standard times) and specifying certain production quantity and quality levels." Control function coordinates, monitors manufacturing management, the result of the production activities and interpreting their importance and taking corrective actions. It aims at achieving the objectives of low cost production and higher level customer services. Following are the areas where control is necessary.

- Excessive work in process inventory.
- Cost reduction and cost control.
- Backlog of a large number of orders.
- Failure of meeting customer orders.
- Breakdown of manufacturing facility.
- Routing and scheduling for work.

Integrated Production System's and Information System

Addressing the integration issue, White observed, "Today we have factories with segregated technology. We need technologically integrated factories. History has shown that integration will not occur by a simple ruling from top management. The technologically integrated factory will become a reality in individual companies only if strategic manufacturing plans are developed and such plans include material handling strategies." Robots, numerically controlled machine, flexible manufacturing systems have been installed in many organisations but they are rarely integrated with remaining products of the production system. In most industries, the hardware needed for the automatic factory already exists but the major challenge is one of integration and implementation. Information systems will support in integrated production systems. The facilities designer is dependent upon having timely and accurate information. To obtain an integrated production system decisions must be made by using timely information.

Supply Chain Management and Internet

Supply chain management is the movement of goods, services, information and finances to supplier, to manufacturer, to wholesaler, to retailer, and to a customer. Supply chain management enables an organisation to get the right goods and services at the right time to the right place in the proper quality and quantity. SCM application has two categories—planning applications and execution applications. These applications when work well, facilitates "just-in-time" delivery of goods. Planning applications aim at better routing of materials and quantities of goods while execution applications track financial data, the physical status, flow of goods and ordering and delivery of goods. When internet was not developed, supply chains were working according to traditional model but emerging of internet has developed an alternative model named the Net Model in which intermediate nodes link many buyers and sellers together.

Use of internet has resulted in lower inventory levels and lower administrative costs. It has provided the buyer with a chance to reach a much larger set of potential suppliers. Use of internet has made it possible to share real time or dynamic information. The use of internet has resulted in enhanced revenue, increased efficiency, increased factory utilisation and lead time reduction. A new form of SCM option involves web based software with a browser interface. It connects one link to the next and generates more efficiency.

Computer Integrated Manufacturing

Decades ago when mainframe computers were slowly moving towards the modern computer, manufacturers began to move rapidly towards electronic controls and automatic intelligence processing through programmable logic controllers (PLCs). They adopted computerization of their control systems since proper resources were available for easy migration of logic into the modern computers. Some of the common areas of computer integrated manufacturing are as follows:

- CAM—Computer Aided Manufacturing
 - CAD—Computer Aided Design
 - CAE—Computer Aided Engineering
 - CNC—Computer Numerical Controls
 - FEA—Finite Element Analysis
 - ROBOTICS—"Human" looking Automation
- Computer integrated manufacturing is a combination of all above. Some of the main elements of computer integrated manufacturing are as follows:
- Application protocols (APs)
 - Different manufacturing fields
 - ISO standard for Exchange of Product Model Data
 - Integrated Resources of IRs

Computerized Business Processes

- Computerized business processes have following constituents:
- Individual parts composition.
 - Geometrical data.
 - Meta data required to define an "end product".
 - Test data.
 - Manufacturing machine instructions.
 - Production planning data.

Conclusion

It can be concluded that the MIS is really play an important role in production and operation sector. For effective utilization, several MIS tools and devices can be added in production process for effective production which results maximum production and least cost.

References

- Taylor, R.K. (2008). *Management Information System*, RBSA Publishers, Jaipur
- Ackoff, R.L. (1967). *Management Misinformation Systems*. *Management Science*, 14(4), 147-156. (plus letter from Rapp port)
- Alavi, M. "An Assessment of the Prototyping Approach to Information Systems Development," *CACM*, June 1984, 27(6), pp. 556-563.
- Alavi, M. (1992, March). *Revisiting DSS Implementation Research: A Meta-Analysis of the Literature and Suggestions for Researchers*. *MIS Quarterly*, 95-116.
- Ariav, G. & Ginzberg, M.J. (1985). *DSS Design: A Systemic View of Decision Support. Communications of the ACM*, 28(10), 1085-1052.
- Bacharach, S.B. (1989). *Organizational Theories: Some Criteria for Evaluation*. *Academy of Management Review*, 14(4), 496-515.
- Bailey, J.E. & Pearson, S.W. (1983, May). *Development of a Tool for Measuring and Analyzing Computer User Satisfaction*. *Management Science*, 29(5), 530-545.
- Baiman, S. "Agency Research in Managerial Accounting: A Survey," *Journal of Accounting Literature*, Vol 1, 1982, pp. 154-210.
- Churchman, C.W. (1969). *The Systems Approach*. New York: Dell Publishing.
- Das, S.R. & Zahra, A. & Warkentin, M.E. (1991). *Integrating the Content and Process of Strategic MIS Planning with Competitive Strategy*. *Decision Sciences*, 22, 953-984.
- Davenport, T.H. & Beers, M.C. (1995). "Managing Information About Processes," *Journal of Management Information Systems*, 12(1), pp. 57-80.

