3-Phase Parallel Model With Testing for MIS

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Abstract

A management Information System (MIS) provides information that is needed to manage organizations efficiently and effectively. Management information systems are not only computer systems - these systems encompass three primary components: technology, people (individuals, groups or clusters, or organizations), and data/information for decision making. Management information systems are distinct from other information systems in that they are designed to be used to analyze and facilitate strategic and operational activities in the organization. Act of Management Information Systems is different from organization to organization. It depends on the type of work they perform. Academically, the term is commonly used to refer to the study of how individuals, groups, and organizations plan, evaluate, design, implement, manage, and utilize systems to generate information to improve efficiency and effectiveness of decision making, including systems termed decision support systems, expert systems, and executive information systems. Most of the business systems are failure because of lack of information, market analysis and customer knowledge. In this paper we focus how efficiently we can capture those data and formalize it valuable information. We propose a 3-phase model for the effective capture. 3-phase model will be completed when it is thoroughly tested before and after delivery of the system.

Keywords

Management Information Systems, Computer Systems, technology, Organization, Decision Systems

I. Introduction

Management information systems encompass a broad and complex topic. To make this topic more manageable, boundaries will be defined. First, because of the vast number of activities relating to management information systems, a total review is not possible. Those discussed here is only a partial sampling of activities, reflecting the author's viewpoint of the more common and interesting developments.

Likewise where there were multiple effects in a similar area of development, only selected ones will be used to illustrate concepts. This is not to imply one effort is more important than another. Also, the main focus of this paper will be on information systems for use at the farm level and to some lesser extent systems used to support researchers addressing farm level problems (e.g., simulation or optimization models, geographic information systems, etc.), those used to support agribusiness firms that supply goods and services to agricultural producers, Software Industry who develop software for company's, industries and accounting packages and the supply chain beyond the production phase. MIS deals with computer systems which provide accurate information in business system. System should be planned properly to reach management requirements. When management is satisfied the system is proper. It is up to the software professionals who should understand the system properly and thoroughly.

Secondly, there are several frameworks that can be used to define and describe management information systems. More than one will be used to discuss important concepts. Because more than one is used, it indicates the difficult of capturing the key concepts of what is a management information system. Indeed, what is viewed as an effective and useful management information system is one environment may not be of use or value in another.

Early business computers were used for simple operations such as tracking inventory, billing, sales, or payroll data, with little detail or structure. Over time, these computer applications became more complex, hardware storage capacities grew, and technologies improved for connecting previously isolated applications. As more data was stored and linked, managers sought greater abstraction as well as greater detail with the aim of creating significant management reports from the raw, stored data. Originally, the term "MIS" described applications providing managers with information about sales, inventories, and other data that would help in managing the enterprise. Over time, the term broadened to include: decision support systems, resource management and human resource management, Enterprise Resource Planning (ERP), enterprise Performance Management (EPM), supply Chain Management (SCM), Customer Relationship Management (CRM), project management and database retrieval applications.

Computer Networks also play key role in Management Information Systems. Management and other staff requires information at there door steps to make decisions. This is possible only by network system.

II. Problems Related to Failures of MIS

Business organization should have a systematic design for success. Success depends on the hard work of every element in a business process. Total team work idles to success. In a business process is related to risk. If a business process starts with high risk then there will be good results as shown in fig. 1. If business process starts with low risk then there will be bad results as shown in fig. 2.
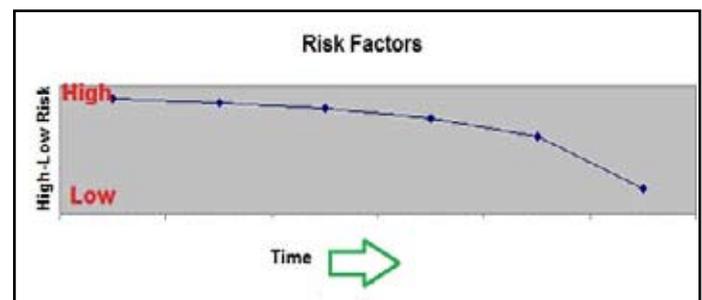

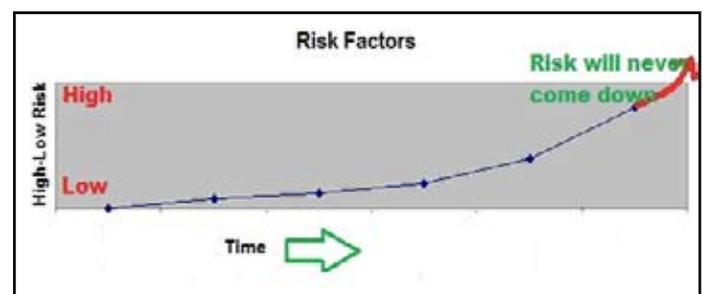Fig. 1: Risk High Good Results

Fig. 2: Risk Low Bad Results

To make business success there requires different type of frameworks. Because business success depends on various factors like management, staff, information systems which have to give accurate results on demand etc. All these factors are combined to be managed as Management Information System (MIS). Most of the business success formula is MIS. Computer Systems play key role in MIS. Software Professional design Software based on management requirements, market analysis, policies of the organization, etc.,

Business failures that can be considered:
1. No proper mission to management.
2. Lack of knowledge on business by management.
3. No proper hierarchy in the organization structure.
4. No proper staff.
5. Lack of usage knowledge of Computer Systems.
6. No proper software to assist them.
7. No future plans.

III. Analysis Related to MIS
If there is proper framework for business then there will be success in business. People invest lot of money on business and they expect returns on business. This is possible only if there is mission to management, because management is top level in the business. They take decisions and they are crucial in organization. This requires some exercises to be followed.
1. They have to impose policies on organization and staff.
2. They should have deadlines to there work.
3. Deadlines should be executed by resources.
4. If exercise can be failure or minor make changes in next
5. executing exercise.
6. Add people if required.
Make your Computer Systems to work accurately for success.

IV. Problem Solution to Make MIS

A. Management
Management in all business and organizational activities is the act of getting people together to accomplish desired goals and objectives using available resources efficiently and effectively. Management comprises planning, organizing, staffing, leading or directing, and controlling an organization (a group of one or more people or entities) or effort for the purpose of accomplishing a goal. Management has long term or major goals and minor or short term goals. Each goal is iterative. Short or minor goals are first visible base on current issues. Each short or minor goal whichever is visible first is iterated and evaluated. The based on result of first short or minor goal, next short or minor goal are made changed as in fig. 3.
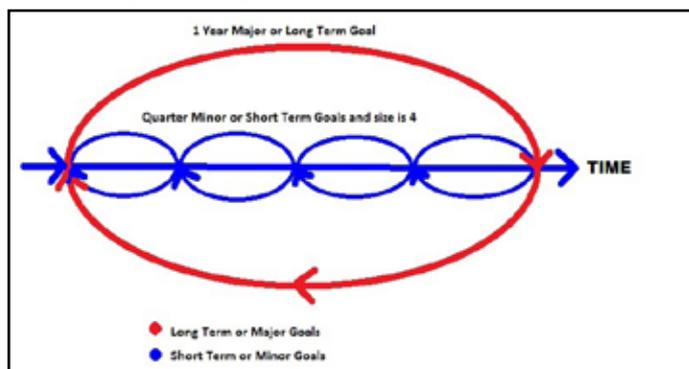

Fig. 3: Management Goals

B. Information System (IS)
An information system (IS) - is any combination of information technology and people's activities that support operations, management and decision making. In a very broad sense, the term information system is frequently used to refer to the interaction between people, processes, data and technology. In this sense, the term is used to refer not only to the information and communication technology (ICT) that an organization uses, but also to the way in which people interact with this technology in support of business processes.

C. Components of Information Technology
An Information System (IS) consists of five basic resources, namely:
1. People, which consists of IT specialists (such as a Database Administrator or Network Engineer) and end-users (such as Data Capture Clerks).
2. Hardware, which consists of all the physical aspects of an information system, ranging from peripherals to computer parts and servers.
3. Software, which consists of System Software, Application Software and Utility Software.
4. Data, which consists of all the knowledge and databases in the IS.
5. Networks, which consists of communication media and network support.

V. Advantages
The following are some of the benefits that can be attained for different types of management information systems.
1. Companies are able to highlight their strengths and weaknesses due to the presence of revenue reports, employees' performance record etc. The identification of these aspects can help the company improve their business processes and operations.
2. Giving an overall picture of the company and acting as a communication and planning tool.
3. The availability of the customer data and feedback can help the company to align their business processes according to the needs of the customers.
4. The effective management of customer data can help the company to perform direct marketing and promotion activities.
5. Information is considered to be an important asset for any company in the modern competitive world. The consumer buying trends and behaviours can be predicted by the analysis of sales and revenue reports from each operating region of the company.

VI. Proposed Model
Before entering into 3-Phase Parallel Model(as shown in Fig. 4), Software Professionals will study the organization, Management, Hierarchies in organization, Management Policies, Staff, Payroll, Accounts, Product, Market Analysis, Administration etc. After collecting all requirements related to data from all sources, they start process for Software Project.
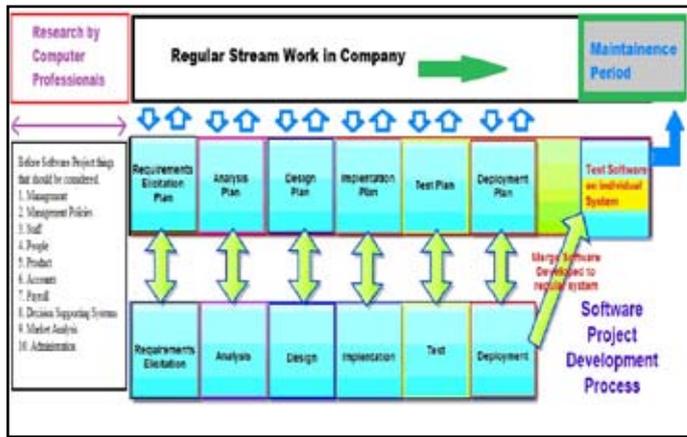
Fig. 4: 3-Phase Parallel Model

3-Phase Parallel model contains 3 phases as given below.
1-Phase will run as usual.
2-Phase is planned work.
3-Phase is current work.

Current work is merged to 1-Phase after some duration of time and that period is called Software Development Period. After completion of Software Project, we enter into maintenance period the regular system will follow automated work. At the maintenance period Software Professionals will assist staff in organization. 2-Phase and 3-Phase will be communicating each other to check Planned Vs Current. 2-Phase and 3-Phase is compared with 1-Phase to better results.

A. Fast Track
3-Phase Parallel model is a fast track model for MIS. Data capture and formalizing it to information is the main process. Where a company or industry can have long term and short term goals. To meet those goals we require MIS. Support for MIS is Software. That Software should be efficient and effective. Software is tested before and after the delivery. Completeness is a state where client and end user satisfies with Software.

B. Testing
Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include, but are not limited to the process of executing a program or application with the intent of finding software bugs (errors or other defects).

Software testing can be stated as the process of validating and verifying that a computer program/ application/ product:
• meets the requirements that guided its design and development,
• works as expected,
• can be implemented with the same characteristics,
• and satisfies the needs of stakeholders.

Software testing, depending on the testing method employed, can be implemented at any time in the software development process. Traditionally most of the test effort occurs after the requirements have been defined and the coding process has been completed, but in the Agile approaches most of the test effort is on-going. As such, the methodology of the test is governed by the chosen software development methodology.

C. Important Testing Types
• Functional and Non-Functional Testing
• Interface Testing
• Destructive Testing
• Usability Testing
• Software Performance Testing
• Accessibility Testing
• Regression Testing

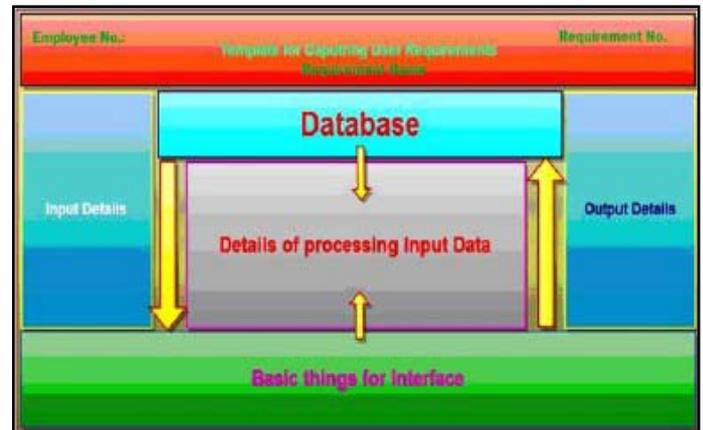Interface Testing Template as shown in fig. 5.

Fig. 5: Interface Testing Template

Software test case templates are blank documents that describe inputs, actions, or events, and their expected results, in order to determine if a feature of an application is working correctly. Test case templates contain all particulars of test cases. For example, one test case template is in the form of a 6-column table, where column 1 is the "test case ID number", column 2 is the "test case name", column 3 is the "test objective", column 4 is the "test conditions/setup", column 5 is the "input data requirements/steps", and column 6 is the "expected results". Details related interface testing as shown in fig. 6.
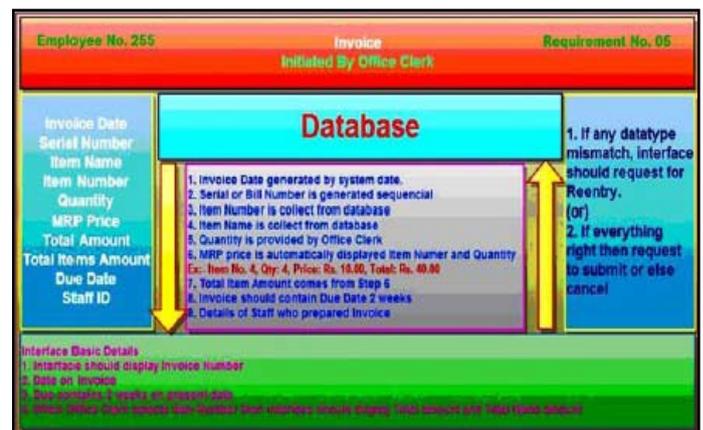

Fig. 6: Interface Template Details

All documents should be written to a certain standard and template. Why? Because standards and templates do help to maintain document uniformity. Also because they help you to learn where information is located, making it easier for users to find what they want. Also because, with standards and templates, information is not be accidentally omitted from documents.

Interface Testing is important for MIS. Whereas other testing types are also important. USA spends $60,000.00 billions dollars on testing. Every software system should be tested and test cases are recorded.

Graph related software testing report is shown in fig. 7.
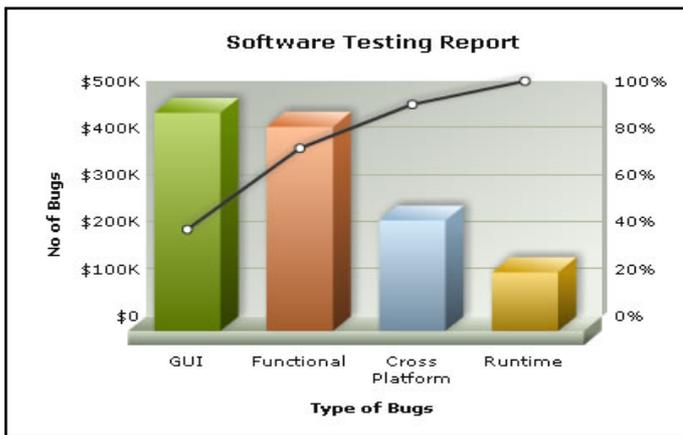

Fig. 7: Software Testing Report

Conclusion

Management Information System is necessary task for every business. Most business is maintained by MIS volumes. MIS is iterative type and we document failure or success related to organization. If success we work to make more success. By having proper MIS one can take better decisions for present and future. Current work of MIS will assist future. MIS should be user friendly to organization and management. MIS plays key role in business and software makes it success.

References
[1] Kadupukotla Satish Kumar, Konda Sreenu, Bathula Prasanna Kumar, Chintagunta Ambedkar,"BASICS FOR EASY CAPTURING AND MODELLING OF REQUIREMENTS ELICITATION, ANALYSIS AND DESIGN IN SOFTWARE DEVELOPMENT PROCESS".
[2] Chodagam Suresh Kumar, Mikkili Dileep Kumar, Donavalli Venkata Vidya Deepthi, Prathipati Ratna Kumar, "FAST TRACK TECHNIQUE FOR SOFTWARE TESTING AND QUALITY ASSURANCE PRACTICE IN PROJECT DEVELOPMENT LIFE CYCLE".
[3] Michael D Myers, Heinz K Klein,"A set of principles for conducting critical research in information systems".