
IMPLEMENTATION OF NETWORK INTEGRATED SERVICES

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1. Introduction

The middle of this century saw the emergence of the Information Revolution. The emergence of information technology using computers, digital micro-electronics, communication satellites, optical fibers all of which well engineered into a system are facilitating easy and affordable movement of information, stored and distributed for user, anywhere in the world.

This paper emphasises on Network Integrated Services such as requirement analysis, design analysis, protocol services etc. Many people think of the networking solutions only in terms of equipment, but it is more than that. The networking needs planning, proper installation, testing and maintenance etc.

II. Network Planning Service

The networking experts have to analyse the requirement of the user and evaluate such factors as cost constraints, expansion, current environment and software. It is also necessary to examine the possible addition of new equipment and application to the network, the historical and project flow of information. This will help in determining the design best suited for specific needs. That means no more guess work about the system configuration or cost.

The following are the various stages of planning:

- * Requirement analysis,
- * Design analysis,
- * Application design,
- * Protocol design,
- * Miscellaneous issue.

The benefits derived from the above services are

- * Improved decision making,
- * Effective use of existing resources,
- * Increased productivity,
- * Reduced time to implement ,
- * Eliminate trial and error approach,
- * Cost effectiveness.

III. Requirement Analysis

A requirement analysis should be the first step in any network project, whether one plans to implement a new network, enhance an existing network, or integrate multiple existing networks.

It is necessary to interview the key staff members, to gather information on the organization plans, growth prospects, and communication requirements as well as existing system and application and users. It is also necessary to evaluate the priorities such as low cost or fast response time. It is to be identified with the organizational constraints that might impact the networks, such as need to merge the two departments to integrate the voice and data communications.

After review of all these data, prepare a comprehensive Requirement Analysis Document that establishes network design criteria and constraints.

IV. Design Analysis

Design Analysis helps to translate the formal network requirements, into a detailed network design. Requirements analysis document serves as the foundation for this process. The network specialist must review the requirements Analysis Document and data on the network criteria and perform the in-depth analysis of each design to determine the key performance indicators of the proposed network. These include traffic volume and flow, response time, through communication hardware and software requirement, and transmission media, These findings are properly documented and designated as Design Analysis Summary Report.

V. Application Design Service

The network may support distributed applications. In this case, it is necessary to analyse functional requirements, specification and define the architecture, data structure and user interfaces. They formulate an acceptance test plan which is to be used to verify that the application performs according to design. It may also include periodic design review

to achieve the best result.

VI. Protocol Design Service

There are several protocols exist in networking arena. A few of them are, ETHERNET, ARCNET, CSMA, CSMA/CD, Token Ring, Token Bus, TCP/IP, OSI-ISO, X.25, X.400, and others.

The user and vendor must sit together and identify network protocol, that is best suited for the user environment. Each protocol has its own merits and demerits.

VII. Physical Design Service

This service assists in the planning for the physical design of a computer facility and the network. Survey the site, select the media, look for every physical consideration that could effect the cost of efficiency of installing the network. Trenching and cabling, Aerial and underground cable runs and other physical elements such as crimping, joining, installing repeaters, gateway, hubs, etc. must be looked into. A detailed configuration layout and working drawings are to be prepared.

VIII. Conclusion

The Network Integration Services are described in this paper. The experience gained by this authors, reveal that no adhoc decisions should be made while networking either at, a department, organisation, or metropolitan areas. Perhaps the first step is to identify and hire network experts to prepare a requirement analysis and integrated services for any organisations.

XI. References

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