In these notes, you will read an overview of the systems development life cycle and each of its phases.

Properly designing a computer network is a difficult task. It requires planning and analysis, feasibility studies, capacity planning, and baseline creation skills. Performing the network management function is difficult, too. The network manager must possess computer and people skills, management skills, and financial skills, and he or she also needs to be able to keep up with changing technology.

Virtually every company that uses SDLC and every textbook that teaches SDLC has its own slightly different variation of the methodology; however, most agree that the SDLC includes at least the following phases: Planning, Analysis, Design, Implementation, and Maintenance. The idea of phases is critical to the SDLC concept. The intent of the SDLC is for phases not to be disjointed steps but overlapping layers of the activity. A second critical concept of SDLC is that of a cycle. After a system has been maintained for a period of time, it is common to restart the planning phase in an attempt to seek a better solution to the problem. Thus, the SDPC phases are cyclical and usually never-ending.

The purpose of the planning phase is to identify problems, opportunities, and objectives. The goal of the analysis phase is to determine information requirements. Information requirements can be gathered by sampling and collecting hard data, interviewing, sending out questionnaires, observing environments, and prototyping.

During the design phase, the design of the system is developed, which was recommended and approved at the end of the analysis phase. The system is installed during the Implementation Phase and preparations are made to move from the old system to the new. Finally, the maintenance phase is the longest phase of the SDLC because it involves the ongoing maintenance of the project at hand. It normally requires network personnel to return to an earlier phase to perform an update to the network.

Analyzing and designing a new computer system can be time consuming and expensive. While the project is in the analysis phase and before a system is designed and installed, a feasible solution must be found. The term feasible has several meanings when it is applied to computer based projects.

The proposed system must be technically feasible. The technical feasibility of a system is the extent to which the systems can be created and implemented using currently existing technology.

A proposed system must also be financially feasible. A system’s financial feasibility is the extent to which the system can be created given the company’s current finances.

In addition, the proposed system must also be operationally feasible. When a system demonstrates operational feasibility, it operates as designed and implemented.

Finally, the proposed system must be time feasible. A system’s time feasibility is the extent to which the system can be installed in a timely fashion while still meeting the organizational needs.

All of these feasibility analysis are difficult to complete, but the studies must be done. Technical, operational, financial, and time feasibility are best determined when the studies are based on solid knowledge of computer systems and an understanding of the state of the current markets and products. Individuals embarking on designing and installing a new computer network will perform better if they also understand analysis and design techniques, project and time management techniques, and financial analysis techniques.

For an example of how these techniques are used, let us consider a common financial analysis technique that involves determining a proposed system’s costs and benefits: the payback analysis. The payback analysis charts the initial costs and yearly reoccurring costs of a proposed system against a projected yearly income derived from that same system. System analysts and middle and upper management use payback analysis along with other financial techniques to determine the financial feasibility of a system.