Developing an Information System

Identifying and assembling a team of employees with the required skills and expertise is a necessary first step in developing a new in-house information system. A management group may be involved in answering questions and providing information in the early planning phases of the project, but programmers and/or software engineers handle the design and implementation of any new system.

Programmers specialize in the development of new software, while software engineers are highly skilled professionals with programming and teamwork training. Their organized, professional application of the software development process is called software engineering.

Project Plan

The first step in the system development life cycle is planning. The planning step involves preparing a needs analysis and conducting feasibility studies. During this step, a company usually establishes a project team, and the team creates a project plan. The project plan includes an estimate of how long the project will take to complete, an outline of the steps involved, and a list of deliverables. Deliverables are documents, services, hardware, and software that must be finished and delivered by a certain time and date.

Project Team

Because of their large size, information systems require the creation of a project team. A project team usually includes a project manager, who acts as the team leader. Sometimes the project manager also functions as a systems analyst, responsible for completing the systems analysis and making design recommendations. Other project team members include software engineers and technicians. The software engineers deal with programming software, while technicians handle hardware issues. The comprehensive process software engineers initiate is called the system development life cycle (SDLC), a series of steps culminating in a completed information system.

Designing the System

A project is ready to move into the design stage once the project team has approved the plan, including the budget. The design process begins with the writing of the documentation, which covers functional and design specifications. In most cases, the project team creates the functional specifications, describing what the system must be able to do.

Implementation

The project can move into the next phase, implementation, once the development team and the systems house develop the design specification and approve the plans. This step is where the actual work of putting the system together is completed, including creating a prototype and completing the programming. In most cases, implementing the new system is the longest, most difficult step in the process.

Support Stage

A system goes into the support stage after it has been accepted and approved. A support contract normally allows users to contact the systems house for technical support, training, and sometimes on-site troubleshooting. Even if the system was designed in-house, the responsible department often operates as an independent entity—sometimes even charging the department acquiring the system. The support stage continues until a new information system is proposed and developed, usually years later. At that point, the existing system is retired and no longer used.