Domain of Management

The domain of management involves "controlling of Instructional Technology through planning, organizing, coordinating and supervising" (Seels & Richey, 1994, pg. 48). Management is different from the other domains because rather than a linear or cyclical process, it includes overreaching strategies designed to control the processes of instructional technology including timelines, quality requirements and organizational contexts (Pershing, 2006). When working within the domain of management, an instructional technologist is concerned with planning instructional product or intervention and implementing the project plan to ensure the plan is being managed according to plan.

Although management is not part of the ISD process, the manager of an instructional technology project organizes, implements and monitors the processes of analysis, design, development, implementation and evaluation. In organizing a project, the manager determines what work is to be done, in what order and when critical tasks will be performed, what resources will be used in carrying out the tasks and how success will be measured. In implementing a project, the manager must be able to design and execute schedules, analyze and enforce constraints, assess and minimize risks, and communicate with team members if issues arise that will affect project scope or timeline. Effective monitoring of scheduling, budgeting, production and communication are keys to the success of any instructional project. These processes are to ensure that organizational needs and expectations are met and sound instructional products are consistently produced. In the role of manager, the instructional technologist plans, supervises, executes and evaluates his work, as well as the work of others.

In the 1994 definition of instructional technology, the domain of management is organized into four subcategories: Project, Resource, Delivery System and Information Management. The subcategories are very different in their scope, but all include the processes of organization, resource management, budgeting, goal-setting, process monitoring and facility maintenance (Seels & Richey, 1994).

Project Management is the process of planning, monitoring and controlling instructional design and development projects (Seels & Richey, 1994). It is the process of carrying out an individual instructional project through its "life-cycle." The life cycle of a project is a series of processes that are initiated when a need or opportunity is realized by an organization (Pershing, 2006). Project managers are responsible for the planning, scheduling and controlling the functions of a project. For an instructional product, the functions of a project include the management of the ISD process. This involves establishing scope, planning needs analysis techniques, coordinating schedules of the project team for design and development activities, as well as working with stakeholders to determine the implementation approach. They must also advocate financially for the project, implement systems for monitoring the processes and develop strategies for evaluating success. Good project management saves organizational resources, increases productivity and increases the likelihood that projects will be successful (Pershing, 2006).

Resource Management is the process of planning, monitoring and controlling resources support systems and services (Seels & Richey, 1994). Resources for an instructional technology project include personnel, budget, supplies, time, and facilities. The management of resources can affect a project's budget, timeline, and quality. In managing resources, the instructional technologist must be able to identify available resources and advocate for additional support with those in control of budget allocations. He must also be able to accurately estimate additional needs, schedule personnel carefully to eliminate unnecessary expenses and strategically budget to implement the project in a cost-effective manner.

Delivery System Management "involves planning, monitoring and controlling the 'method by which distribution of instructional materials is organized . . . [It is] a combination of medium and method of usage that is employed to present instructional information to a learner'" (Seels & Richey, 1994; Ellington & Harris, 1986). Delivery system management can include a variety of hardware and software but, in many cases, refers to the administration of a Learning Management System (LMS). This is due to the increased popularity of e-learning approaches by many organizations and businesses. When assuming the role of delivery system manager, the instructional technologist must focus on compatibility, user support and processing issues. In many instances, managers make decisions regarding delivery systems based on resource management (Seels & Richey, 1994).

Information Management (IM) "involves planning, monitoring and controlling the storage, transfer or processing of information in order to provide resources for learning" (Seels & Richey, 1994). Often presented as a cycle, IM entails 5 basic steps: identification of information needs, information acquisition, organization and storage, information distribution and information use (Davenport & Prusak, 1993). Each step requires the planning, the organization, the coordination and the control of a number of activities supported by information technology. As an information manager, the instructional technologist is often responsible for identifying the information, defining the methods of information sharing and deciding on the storage of media and the ability of users (either project team members or learners) to access that information with ease.

Knowledge management (KM) is a much broader term than IM, which is usually listed as a subset of it. KM involves maintaining a complex collection of different components such as ideas, information, administrative processes, policies and procedures in order to facilitate the processes of current or future projects (Spector & Edmonds, 2002). The major focus of KM is to identify and gather content from documents, reports and other sources and to be able to search that content for meaningful relationships. The development of a Knowledge Management System (KMS) is, in some cases, the intervention employed by an instructional technologist acting as performance technologist (Pershing, 2006) to support system stakeholders' access to electronic performance support systems (EPSS) and other training and organizational materials (Pershing, 2006). Its establishment can also support a project team, department or organization by providing access to a body of knowledge that can facilitate needs analysis, instructional design, materials development, project implementation and supporting data for evaluation (Pershing, 2006). An instructional technologist working as a knowledge manager must be able to design, develop, implement and maintain a system that addresses the organizational needs and is evaluated as an effective resource for individuals.

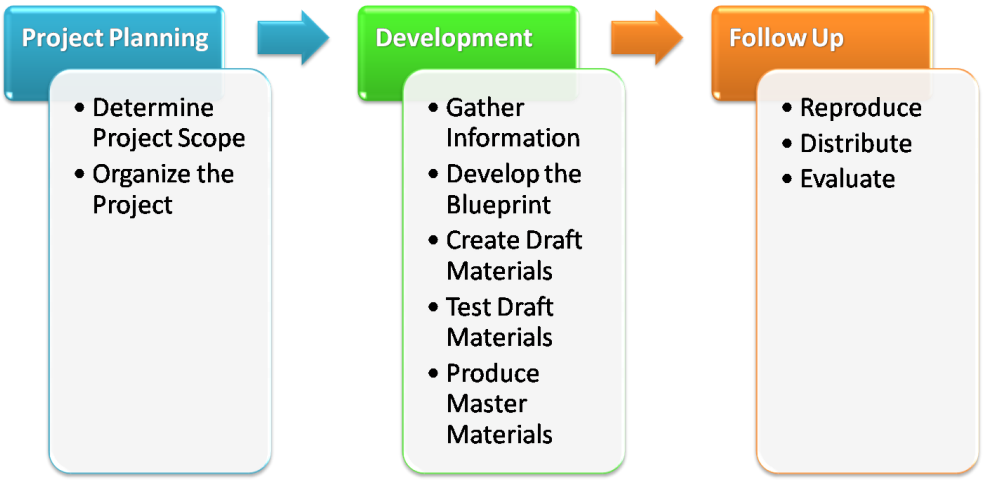
Work within the domain of management requires that technologists consider a variety of issues. As the domain of management is multi-faceted, knowledge of various processes is required. The following section includes a number of questions that technologists ask as they approach the management of instructional technology.

What processes will be used in managing an instructional project?

Determining how to manage the instructional technology project is important to successful production. A number of models exist within the domain of management relevant to the processes of instructional technology. Michael Greer's ID Project Management model (1992) and James Pershing's Project Management Life Cycle (2005) both offer strategies for managing instructional design and development.

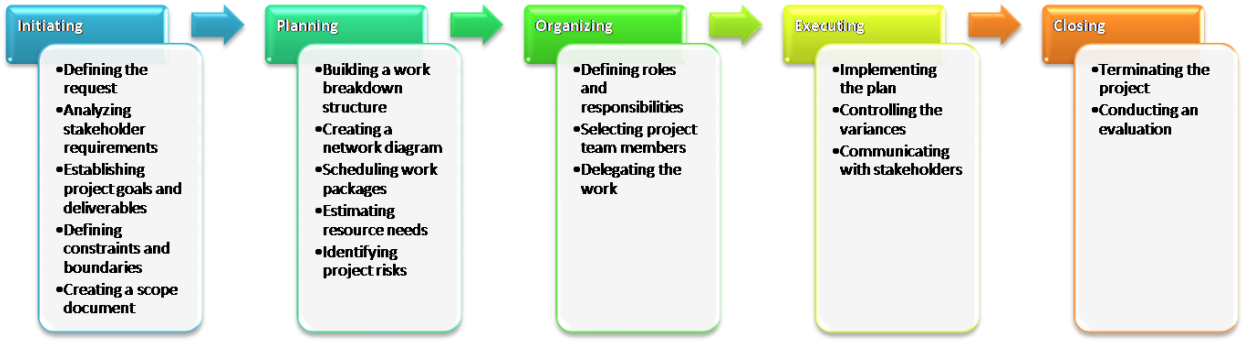
Greer (1992) presents a three-phase model (see Figure 1) that includes: project planning, instructional development and follow-up. Within the phases, the model is organized as follows:

Figure 1: ID Project Management (adapted from Greer, 1992)



Pershing (2006) focuses on human performance technology in his research, but suggests a process for managing a project that takes a differing approach than Greer. Pershing's model includes the main processes of: Initiating, Planning, Organizing, Executing and Closing. The structure of Pershing's model follows:

Figure 2: Human Performance Technology Management (adapted from Pershing, 2006)



While Greer's model seems more focused on the product, Pershing presents a model of the processes of management. Greer's model is specifically developed for the design of instructional products. Pershing, on the other hand, has designed his model to include not only instructional product design, but also the implementation of performance improvement interventions. However, both models provide strategies for managing the processes of instructional technology.

How will resources be allocated?

The term "resources" is often defined as "human resources," since they are the most costly to a project and the most challenging to allocate. Other resources such as tools, materials, and funding seem to naturally fall into place. It is a much more strategic task to allocate human resources to a project.

When determining the specific "work packages," manageable chunks that facilitate overall planning, that are included in the scope of a project, the instructional technologist develops a work breakdown structure (WBS) (Pershing, 2006). The purpose of the WBS is to determine what needs to be done and facilitates human resource allocation by assigning personnel to specific tasks. The other benefit of the WBS is that it serves as the starting point to resource allocation and scheduling.

Human resources are assigned to tasks and project managers are able to see when scarce resources will be needed, allowing him to not only estimate and maintain the project budget, but also determine where resources can be used in other work packages within the project (Pershing, 2006). This eliminates unnecessary allocation and maximizes the use of human resources.

By strategically allocating resources to work packages, the instructional technologist is able to enjoy the flexibility of being able to manipulate schedules, cut costs on certain areas of development and supplant funds to project processes in need of more attention. This flexibility allows the project manager financial padding should an issue arise in which monetary resources, scheduling, production or scope changes.

What risks have been identified and how will they be managed?

Risk management is a key component of project management and can contribute to the success or failure of a project. Risks include unexpected changes in project goals or scope, team conflict, or loss of resources (Pershing, 2006). In the planning stages of a project, a risk assessment should be conducted. Through this assessment, the technologist is able to identify possible project risks, assess the probability of their occurrence and estimate the impact of the risk should it occur. The identification of these risks and the analysis of the impact will help the manager to develop a contingency plan should something go wrong.

What controls will be in place to monitor the progress of the project?

A number of controls, including communication and schedule control plans, can be implemented to avoid possible problems in either area. The communication plan is developed during the planning stages of the project and identifies how team members will interact, how work will be submitted and what methods will be used to communicate project information. A schedule control plan can also be included in the project plan to identify a correction process should the project schedule fall behind. The schedule control plan usually defines a process for reorganizing, restructuring or re-initiating a project. By developing these controls early in the process of managing a project, the technologist is able to communicate clearly the expectations of all team members regarding communication and adherence to time constraints.

How will project specifications be communicated to project personnel?

Including technical specifications in a project plan is critical to the success of any instructional development project, especially if team members are working at a distance. It is the role of the instructional technologist to determine in what format materials will be produced according to the specifications of the delivery system, whether print, audiovisual, computer-based or integrated. These specifications should be communicated to team members prior to starting the development process.

How will project personnel be able to collaborate, share and transfer information to each other?

In the world of project management, there are a number of options available to allow project team members to collaborate, share and transfer information and resources. Information management is a growing field due to the increasing speed, power and collaborative nature of the Internet. Selecting a system for sharing information and documents is important in any environment, but critically important if team members or other stakeholders are working at a distance.

Setting up a system for collaborative work can be done through the use of technologies such as wiki or whiteboard systems that allow users to edit and discuss the creation of media while it is under development. File and information sharing systems allow users to access anything from project files to schedules to social bookmarks in a manner that is both user-friendly and efficient. This is also true of the transfer of information. Traditionally, files are transferred using file transfer protocol (FTP) technology, intranets or common project spaces that include file "lockers" for project teams. Web, server and locally-based solutions are readily available to facilitate the sharing of information between project members in order to promote collaboration.

The establishment of information management avenues is critical to the success of any project, especially if stakeholders are working at a distance. The instructional technologist working as a manager must identify, select and require the use of the information management systems in order to promote collaboration, sharing and the transfer of critical project information.