

HERE'S A SIMPLE SYSTEM THAT CAN PROVIDE A MECHANISM TO DOCUMENT TRAINING ACQUIRED, AND ASSIST YOU IN DEVELOPING NEW TRAINING RESOURCES THAT CAN BE USED TO MEET DEVELOPING NEEDS.

PLANNING FOR TRAINING AT AT&T

BY EDWARD
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Technological advancements and increased complexity of job functions have become common to all professional occupations. However, occupations dealing with the quantitative analyses: management science, computer science, engineering and other physical sciences have encountered incredibly rapid changes in all aspects of the work environment. As a result there is a need to continuously update educational skills to insure that projects can be efficiently completed. Associated with training requirements is the cost in terms of both expense and time necessary to train these specialized personnel. The need to balance the benefits of training with the associated costs makes it important to develop a system to efficiently meet the training requirements of these system-oriented personnel. By certain systems analysis groups within the Service, Costs and Rates Organization of the American Telephone and Telegraph Com-

pany, Long Lines Department, the system involves a simple approach to identify analyst skill needs and then provides an organized scheme to efficiently meet the identified needs.

AT&T Long Lines Department, Service Costs and Rates organization has encountered an increasingly complex work environment due to a myriad of developments in terms of technological changes, regulatory demands and changes in management methods. In dealing with issues that are related to these complex developments, personnel have to contend with a wide variety of analytical disciplines such as economics, accounting, finance operations research, statistics and telecommunications engineering. While many skills in these disciplines were obtained in university training, the rapidly changing job environment demanded additional training to insure that skill levels were sufficiently complete so that projects would be completed efficiently and on schedule.

While additional training was

clearly needed, it was also necessary to select proper training topics and training media to insure that time spent away from normal job duties was efficiently used. Training is, after all, expensive in terms of tuition, analyst wages and project time delay, and should be treated as any other resource.

To balance the benefits of training with associated training costs, a training planning system was designed to fit into the normal process of defining and scheduling project job requirements. The objectives were to:

- formalize the training planning process but not make it so rigid as to become a burden rather than a valuable planning instrument;
- use all available training material regardless of its format so that the needed training skills could be obtained through a variety of methods.

The *Training Planning System* involves the use of two forms: a *Project Skill Needs* form; and a *Skill Needs Assessment Training Schedule* form. The system and how the two forms are used is outlined in Figure 1.

The first step in this System is to identify the skill needs for all projects that are scheduled for the next year. This form should be completed at the same time that project work schedules are being developed for the coming year. As such, the identification of skill needs could be a by-product of ongoing project management and budget-making processes.

An accounting for all project activities should be developed in the *Project Skill Needs* form (Figure 2). The form need only be completed once. As the project progresses, appropriate additions and/or deletions could easily be made to the form. In the Service, Costs and Rates organization, the manager who was assigned to a specific project completed the form for all activities and analysts assigned to that manager's projects. The following guidelines were used by each manager to help in identifying specific project activities. A project activity . . .

- implies action
- is a clearly defined work effort which can be performed
- consumes resources
- produces same output
- can involve technical and managerial work categories

Identified project activities were entered in the "Project Activity" section of the *Project Skill Needs* form. Management skills were included as suggested in the last guideline since skills in project management and technical presentations were just as important to the completion of projects as are technical skills.

Identify Skill Needs

Once project activities were identified, it was necessary to identify the skill need and the intensity of the skill need that would be required to accomplish the project activity. In the "Skill Need" section of the form, a short statement of the skill need was entered. In the "Skill Need Intensity" column an assessment of the intensity of the skill need was made. For example, answers to the following questions provided appropriate assessments of skill needs:

- Does the analyst need a detailed knowledge of the theory and

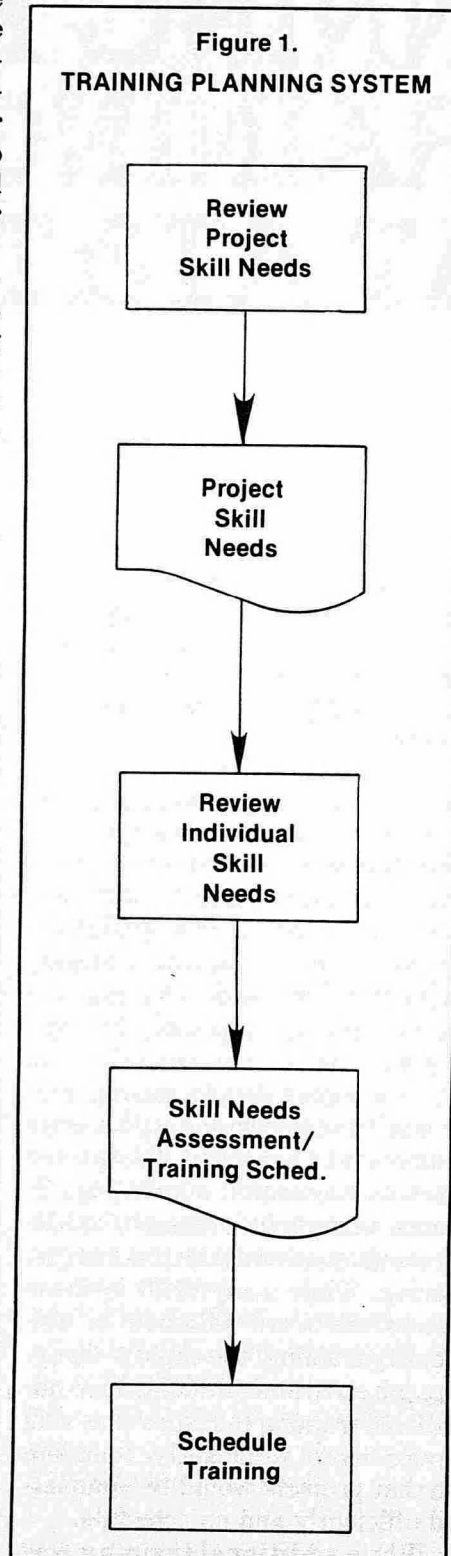
concepts in a specific technical or management area?

- Would a knowledge or awareness of the area be sufficient?

This information was most valuable in determining the appropriate training medium to use. The final piece of information needed on the first form was an estimate of when the identified skill need would be required for a project activity. The project manager re-

viewed the overall project plan and entered, in the "When Needed" column, an estimate of the latest date by which an identified skill must be acquired. With this added piece of information, sufficient information was available for completing the next form, the *Skill Needs Assessment / Training Schedule* form, which was used to identify the training resource that could be employed to meet the identified skill needs.

Figure 1.
TRAINING PLANNING SYSTEM



Determining Needs & Selecting a Medium

The *Needs Assessment/Training Schedule* (Figure 3) was completed individually for all analysts. From the *Project Skill Needs* form, the project manager determined the skill need for each project. The project manager then assigned projects to specific individuals, and skill needs for individual analysts were developed. On the *Needs Assessment/Training Schedule*, entries in the "Skill Need," "Skill Need Intensity" and "When Needed" columns were entered directly from the *Project Skill Needs* form.

Next, the project manager took an inventory of skills associated with an identified skill need that had already been attained by an individual analyst. Brief statements such as "Completed College Course" or "Brief Exposure In Previous Job" were entered in the "Background Currently Available" column of the second form.

At this point, the project manager could map skill needs to available skills and determine if additional training was needed. The project manager estimated training that was required and indicated in the "Additional Training Needed" column if the analyst needed additional training in a particular skill. While judgment had to be used here, the project manager had sufficient information available to determine training needs. According to the intensity of the skill need and the skill background available, the analyst could require additional training that could range from reading certain company practices or technical texts to attending an organized course. The project manager entered an in-

formed estimate of the need to obtain additional training for an individual analyst.

Once the information on the two forms was complete, the project manager forwarded the *Skill Needs Assessment / Training Schedule* form to a training coordinator who was familiar with all available

training mediums. The training coordinator identified a training medium to meet an individual analyst's training needs and reviewed these with the project manager. Agreement was then reached as to the training resource to use and appropriate scheduling of additional training was made. The final

scheduling was considered when the training had to be complete to meet project needs. The project manager had full control over what training medium would be used and when it would be used, as such training became an asset rather than a burden to project completion.

Figure 2.

Project Skill Needs Assessment

Project:

Project Manager:

Date:

Project Activity	Summary Of Skill Need	Skill Need Intensity	When Needed

Figure 3.

Skill Needs Assessment/Training Schedule

Name:

Date:

Skill Need	Skill Need Intensity	When Needed	Background Currently Available	Additional Training Needed	Training Medium	Training Schedule	Comments

The following project example illustrates the application of the Training Planning System. The project involves the development of a computer analytical system. This project was divided into the following categories:

- Define the objectives of the system
- Develop the overall logical definition of the system
- Develop a system plan
- Perform technical analysis to support system components
- Program the system on a computer
- Use the output of the system

The first three activities were assigned to one analyst; therefore the application in this example will be limited to these three activities. Each of the project activities had a number of associated skill needs

and these are displayed on the *Project Skill Needs Assessment* form displayed in Figure 4. The intensity of the skill need and when the skill is needed are also displayed.

These project activities and skill needs were assigned to Ms. A. Analyst. The project manager for this project reviewed, with A. Analyst, her background in identified skill needs. The results of the information provided the project manager with information to determine if additional training was needed. Based on the project needs, the project manager and the training coordinator were able to determine the method of training and the training schedule. A review of individual skill needs in this example illustrates the Training Planning System could be administered.

In the first skill need, "*Develop Priority Ranking*," a high-skill level and additional training was needed since the analyst did not have sufficient background. However, since the skill was currently needed, there was no time to attend an organized course. Therefore, the training coordinator was able to direct the project manager and the analyst to available references so that some skills in this area could be acquired.

The same medium was used in the second identified skill; however, the intensity of the skill need only called for a "*Knowledge of Concepts*." Therefore, the reading reference medium was chosen to fill the skill need.

The third skill need, "*Application of Model Building Concepts*," called for a high skill level.

Figure 4.

Project Skill Needs Assessment

Project: Cost System

Project Manager: E. Konczal

Date: 4/2/77

PROJECT ACTIVITY	SUMMARY OF SKILL NEED	SKILL NEED INTENSITY	WHEN NEEDED
Define System Objectives	Develop Priority Ranking of System Objectives	High Skill Level	Now
Define System Objectives	Cost/Benefit Analysis	Knowledge of Concepts	Now
Logical Definition of System	Application of Model-Building Concepts	High Skill Level	In 4 Months
Logical Definition of System	Computer System Development Concepts	Medium Skill Level	In 4 Months
Develop System Study Plan	Organize Plan to Develop System Steps	Knowledge of Concepts	In 2 Months
Develop System Study Plan	Presentation to Steering Group	High Skill Level	In 5 Months

However, since this skill was not needed for four months, the training coordinator was able to schedule a noncompany course in time to meet the skill need.

The fourth skill need did not call for additional training since the analyst had sufficient background. No training was needed. However, the information on this skill need could be used in the identification of company course training that may eventually be organized.

In the fifth and sixth skill needs, both required additional training and, since company courses were available in these topics, appropriate training for Ms. Analyst was scheduled.

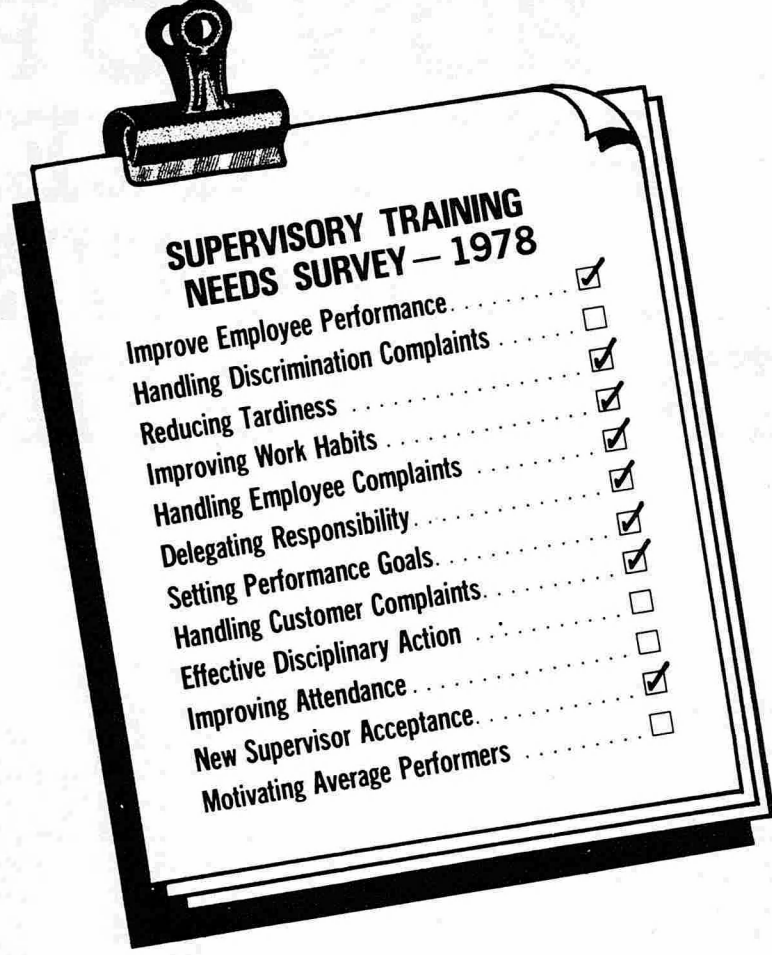
This example illustrates how decisions could be made concerning training requirements so that an organized plan for training could be developed to insure an efficient and timely completion of job activities.

While the Training Planning System outlined in this article is relatively simple to employ, it has been productively used to develop a plan to train specialized personnel who work on complex projects. An important part of this system is that it allows an organized thinking through of the skill needs required to complete a project activity and provides a framework to efficiently identify and employ all available training media. It also provides a mechanism to document training acquired and assists in developing new training resources that could be used to meet developing training requirements.

While the Training Planning System was primarily intended for certain specialized professional personnel, its simplicity and its ability to be easily incorporated into ongoing administrative processes make it possible to be used in a variety of job environments where productive use of personnel training is desired.

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