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ABSTRACT The Information Support System (ISS) is a management information system developed for the National Drug Education Program (NDEP). The major components of the ISS are: (1) the Project Growth Record which provides a tool for project self-evaluation and for communication between NDEP project officers and project directors; (2) the Quarterly Project Summary which provides quantitative and administrative data for program management and for Congress and the Administration; and (3) the Shared Experience Bank, the prime vehicle for informally sharing project activities. The Project Growth Record uses a three-column format allowing for systematic comparisons between plans and accomplishments. The Shared Experience Bank provides a communication network between projects with similar problems or activities. The system is based on narrative reporting. It focuses on problem solving and on providing useful information to local project staffs. Samples of reporting forms are appended. (Author/PF)

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THE INFORMATION SUPPORT SYSTEM
MANAGEMENT INFORMATION FOR PROBLEM SOLVING

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THE INFORMATION SUPPORT SYSTEM
MANAGEMENT INFORMATION FOR PROBLEM SOLVING

Nancy A. Mead

There are a number of reasons for sharing our experience in developing and implementing the Information Support System (ISS), a management information system for the National Drug Education Program. First, we made a lot of mistakes and learned a great deal in the process; some of this can certainly be passed on to others. Another reason is that our system has some innovative approaches that are readily adaptable to a wide variety of situations. Finally, I think some of the philosophical underpinnings of the system are unique and worthy of discussion.

The National Drug Education Program

Before I begin to discuss the ISS itself, I need to provide some background regarding the National Drug Education Program (NDEP). This is essential because the ISS was designed not only to meet the needs of the NDEP but also to mirror some of its important goals and premises. It is important that the methods for collecting information not only yield the needed data, but also that the system be congruent with the overall program philosophy. For example, a program oriented toward providing specific services to a well identified population lends itself to a quantitative reporting system; a program directed at responding to locally identified needs in a variety of areas lends itself to a more flexible system.

The National Drug Education Program was established in 1970 within the U.S. Office of Education for the purpose of supporting drug abuse prevention programs for youth. The program recognizes that there is no single approach for solving the drug problem. Since drug abuse problems in the inner city are

not the same as those in the suburbs, it is necessary to develop projects based on specific local needs. Not only are different drugs being abused, but different social institutions influence the youth. In some communities the home and church provide strong direction for young people; in other communities peer groups and schools are more prominent. In order for a project to be effective, the community must define its own particular problem and assess its resources. And because the drug scene changes so quickly and in such complex ways, it is necessary for project developers to experiment with new approaches and to measure their effectiveness.

On a national basis, the NDEP accepts the fact that there is no one strategy for dealing with the drug problem. For this reason they have launched a variety of different approaches. These have included: 1) major training and coordination programs within State Departments of Education, 2) college and community based demonstration projects, 3) innovative school based projects, 4) short term training and long term demonstration projects for preservice drug education in Schools of Education, and 5) training and follow-up assistance for community and school drug prevention teams. Admittedly, some of this variety is due to the changing priorities of congress and the administration. However, it is primarily the result of creatively experimenting with a number of national program strategies.

Within all of this variation, the NDEP must manage and account for all of its activities, a task which requires several types of information. First, there is the unending need for quantitative information which feeds into the various program planning and budgeting processes and are utilized during congressional and executive branch hearings. Secondly, there is need for information for

project monitoring, particularly data on project activities and financial matters. Finally, the NDEP is a demonstration program. With a budget which at its height approximated only 13 million dollars annually, the program has no possibility of substantially reducing drug abuse. It therefore has a responsibility to experiment with strategies and to document results for those populations that the program cannot hope to reach directly.

In addition to these rather typical information requirements for federal programs, NDEP strives to establish a facilitative relationship between the program and the projects. These relationships involve mutual problem solving, where both successes and failures contribute to future strategies.

The Information Support System

In response to both these sets of needs, the ISS was designed to serve three functions:

- 1) To provide management information for program monitoring and decision making;
- 2) To provide information for project growth and development; and
- 3) To document project activities for identifying successful strategies.

The major components of the ISS are: 1) the Project Growth Record which provides a tool for project self-evaluation and for communication between NDEP Project Officers and Project Directors; 2) the Quarterly Project Summary which provides quantitative and administrative data for program management and for congress and the administration; and 3) the Shared Experience Bank, the prime vehicle for informally sharing project activities.

The Project Growth Record is made up of four simple reporting formats which record quarterly the progress of each project. These are provided in Appendix A.

The essence of the Project Growth Record is a management by objectives approach combined with discrepancy evaluation. It asks each project to lay out an Action Plan for each major project area. The information is laid out in three columns indicating what activities are planned, for whom, in order to change what need or condition. At the end of each quarter, a project provides an Accomplishment Report in each major project area, again in a three column format, indicating what specific activities were accomplished, for whom, with what progress toward changing specific needs or conditions. These formats allow for a systematic comparison between the plan and the accomplishments, thereby providing an immediate self-evaluation report for the project, as well as a simple narrative on project operations for the NDEP Project Officer.

However, additional reporting is necessary to pursue the important problem solving emphasis of the program. Therefore, on the back of each Accomplishment Report, the project records its Growth Report for the quarter. In a loose narrative format the project indicates what problems they encountered in each project area and what they learned from their experience. This is followed by a Change Report in which the project provides a narrative indicating any changes they intend to initiate. Finally, on the back of each Change Report the project fills out a new Action Plan, which includes the activities for the coming quarter, incorporating any project changes. This becomes the new baseline, against which the next quarter's accomplishments are compared. Visualize a Project Growth Record which is divided by major project areas and which builds quarter-by-quarter with Accomplishment Reports, Growth Reports, Change Reports and Action Plans.

In addition to the Project Growth Record, projects are also required to fill out a Quarterly Project Summary. This admittedly unexciting report asks for information on staff, budget and quantitative outputs of the project (e.g. number of people trained) for the quarter. This feeds into important administrative reports for the program. This report is flexible and changes from time to time as the needs of the office change. For example, we modified the report when we needed to start getting project staff data by sex and job position in order to meet our equal opportunity reporting requirements.

The final component of the system is the Shared Experience Bank. This mechanism was added to provide an informal communication network between individual projects. It sets up a process whereby projects voluntarily submit materials they have developed or descriptions of significant experiences, both successes and failures, which they would like to share with other projects in the program. This paper network facilitates personal contacts between projects with similar problems or activities.

Reports

These components, the Project Growth Record, the Quarterly Project Summary and the Shared Experience Bank, provide the input for a series of reports that meet the various needs identified in the beginning of the article. As indicated earlier, the Project Growth Record is organized in such a way that the act of filling out the forms provides an immediate report. The comparison of plans and accomplishments provides a means for self-evaluation for the project and a progress report for the NDEP Project Officer.

There are also a series of summary reports which meet a variety of information needs. The Quarterly Project Summary is summarized by region and by national

totals to provide quantitative data for program management and external requests for information. The NDEP Project Officers may use regional reports to identify the strong and weak projects within their assigned region. They may use the national reports to gauge their projects against national trends.

The narrative material in the Project Growth Record is coded by activity type, target group, intended outcomes and goals, and then summarized in a number of ways. First, concise project profiles are developed, including all the activities, target groups, outcomes and goals for each project. Secondly, several indices are created: by activity type, target group, outcomes and goals. These may be used in a number of ways: 1) to identify activity types which are being utilized; 2) to compare target groups in terms of degree of representation; 3) to indicate types of outcomes attempted; and 4) to describe types of project goals. Besides describing national trends, the indices may be used to identify and link projects involved in similar activities or with similar target groups. These data may also be analyzed over time to measure program impact. The ISS was originally designed to include an evaluation component. Although this element was dropped, the system still has the potential for evaluative analyses.

System Development, Implementation and Maintenance

Besides the structure of the system, it is important to identify some details of the development, implementation and maintenance of the system. In the spirit of problem solving I would like to share with you some of the problems, as well as some of the solutions we reached. The ISS was developed and implemented under contract with a management consulting firm, E. F. Shelley and Company of Washington, D.C. The key aspect of our contractual relationship was continuous interaction between the contractor and the program. This

element was essential because systems development cannot be accomplished in a vacuum. Program input was necessary to identify information requirements. Another important element of the development process was field testing the system and beginning to establish feelings of ownership with the program staff and the projects. Projects helped identify information sources and potential reporting problems.

Implementation began with building a relationship between the program and the projects through the information system. Initial contacts were uncertain and hesitant, and expectedly so. Information systems are inherently distasteful to projects; they involve additional demands. In the process of orientation, the technique for dealing with indifferent or negative attitudes is critical. Strong program support for the system is necessary, at all program levels. The program director must be visibly committed to the system. Each Project Officer must reinforce, on a regular basis, this point of view. Training is also important. We developed a day long training session for all Project Directors on the system. This was backed up by written material, printed in the front of each Project Growth Record.

Projects are likely to need help in their initial adoption of the system.

This requires individual consultation with respect to specific problem areas or situations. We used two approaches for this. First, we trained the NDEP Project Officers to be "experts" in the system, thus reinforcing our effort to give the Project Officers ownership in the system. Secondly, we established a group of consultants who were skilled in program planning, information systems and evaluation. Like most information systems, the ISS presupposes a certain level of skill in program planning and information collection. This assumption

was not always valid. For example, our college based projects were developed and implemented by students who had little programming experience. The consultants assisted projects with general planning and management problems, leading to the specific skills necessary for the ISS reporting.

Let me reemphasize the fact that a new system never goes smoothly at first. We cannot expect projects to immediately see the "utility" of such an approach. The maintenance of the system is a function of the extent to which the program and projects both find that the system meets some of their important information needs. This is a developmental process. First, it requires providing useful feedback from the system. Projects and program staff must receive reports in formats that are easy to read, useful for their needs, and timely. Another important aspect, particularly initially, is the need for feedback on the feedback. Projects and program staffs need to be shown how to read the reports, how to locate useful data, how to use the reports for a variety of purposes. We used an approach of providing short written analyses of the data, pointing out important trends. Group briefings and frequent individual consultations were also conducted.

Tardiness is a major systems maintenance problem. Late receipt of information leads to late report production, which leads to out-of-date reports, which leads right back to low incentives for getting the information in on time. Our experience bears out the demoralizing nature of this cycle. This situation is probably best alleviated by rigidly enforcing due dates.

Adaptations

At this point, I think it is important to note that the system can be adapted to a variety of situations. This is evidenced by several adaptations which

were made of the system within the NDEP. First, the system was adapted to be used with the Help Communities Help Themselves Program. In this effort, the NDEP supported regional training centers which provided training and technical assistance to teams of individuals from communities from all over the United States. Up to 1,000 teams have been trained during the course of a year. It was important for the NDEP to measure the overall results of this major effort, but it was impossible for the program to monitor the activities of each team. In any case, follow-up was the responsibility of the training centers. The system was modified for use by the program and the training centers. The centers included action planning as an important part of the training sequence and used progress reporting to determine needs for technical assistance. Summaries of reports were provided to the NDEP for determining overall effectiveness of the effort. The ISS was simplified for a smaller training effort directed toward teams from Schools of Education. Even some of our original training and demonstration projects adapted the technique for their own purposes, especially State Department of Education programs who found it useful for monitoring their own statewide efforts. The ideas are adaptable, therefore, to a variety of contexts.

Underlying Philosophy

It is difficult to tell how much of our philosophy about information systems was imposed on the ISS, and how much of it evolved from our experience with the system. However, I think it is important to identify some of these assumptions. First, we have a bias toward a naturalistic type of information system. Reading a Project Growth Record is not like reading a typical management information report. It is primarily a narrative, with some structure imposed (though not necessarily followed). This makes for difficult summarizing and

analyzing, but I believe it comes closer to the type of information which is useful at the project and program operations level. We are all natural information processors; we are constantly making plans and checking our own progress. But somehow, when this all becomes concretized in a typical management information system the results are disastrous. One of our basic strategies is to try to tap this natural process and capitalize on it in a way that is useful to people at many levels in a program.

A second assumption underlying the system is an emphasis on the "problem solving process and facilitation. It is not expected that projects will accomplish everything that is set out in their action plans. However, the projects are expected to set plans, check out their own progress and make appropriate changes. This is accountability for a process, not a specific product. Critical to this process is a willingness to share information, both positive and negative. Within this system, those receiving information have a responsibility to assist those providing information in their problem solving process.

Finally, a third premise of the system is a people centered approach. The focus of the system at all levels is on the target group "out there" and how the available resources can best be directed toward meeting those needs. This allows a variety of groups with different functions and different capabilities to cooperatively direct their efforts toward a single end.

The development and implementation of the Information Support System provided a testing ground for these assumptions, as well as for the overall philosophy of the National Drug Education Program. Not all of our expectations were met, but the experience provided us with some new insights into the function of information in providing a facilitative environment for mutual Federal-local problem solving.

The following material, extracted from a quarterly report from the Awareness House project in Sioux Falls, South Dakota, is evidence of our success:

Our attitude on reporting to supporting agencies has been that it is a necessary and distasteful, time-consuming task, and that we gained nothing for our own organization. With a change in attitude, i.e., an opportunity to closely look at ourselves as well as the involvement of all of our staff--each reporting on his area of interest and activity, we now see this process as providing us with valuable information.

Formerly no one on our staff wanted to do the reporting. Now that the task has been divided among our entire staff, the report writing has caused us all to look at ourselves and make concrete plans out of formerly scattered ideas. We are enthusiastic!

Formerly we did not use the reporting technique as a learning tool for ourselves. We find in trying it for the first time that we have looked at many new areas of our work separately and as part of a whole process. We suspect that this activity will continue to keep us aware of what we are actually doing, and the involvement of everyone on this project will set up new lines of communication.

APPENDIX A
PROJECT GROWTH RECORD

Project: _____ Activity: _____

CHECK CATEGORY OF SERVICE: DIRECT PERSONAL SERVICES INDIRECT PERSONAL SERVICES
 EDUCATION AND TRAINING INTER-ORGANIZATIONAL SERVICES PROJECT MANAGEMENT/ OPERATIONS

Please describe what you plan to accomplish in this category of service during the next quarter. Include just one distinct activity* per page. (*as listed on your Activity Overview)

ACTION PLAN

covering

mo. day yr. to mo. day yr.

Please return a copy of this form attached to your Quarterly Summary for this quarter.

WHAT YOU PLAN TO DO and WHEN	TO WHOM		WHAT SHOULD BE DIFFERENT
For each of the principle activities that you listed in this category on the Activity Overview, what are the main events or tasks that you plan to accomplish this quarter? When will they occur?	Describe who you plan to affect, influence or involve during the coming quarter? Give numbers; estimates are fine.		In terms of these people, what are the conditions or needs that you are trying to affect or change with this activity? Please describe these conditions in terms of "before" and "after". For instance, what do you assume them to be <u>now</u> what do you expect will be different by the end of quarter?
	<u>WHO:</u>	<u>HOW MANY:</u>	

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ACCOMPLISHMENT REPORT

covering

mo. day yr. to mo. day yr.

Please return a copy of this form attached to your Quarterly Summary for this quarter.

Project: _____ Activity: _____

CHECK CATEGORY OF SERVICE: DIRECT PERSONAL SERVICES INDIRECT PERSONAL SERVICES
 EDUCATION AND TRAINING INTER-ORGANIZATIONAL SERVICES PROJECT MANAGEMENT/ OPERATIONS

Please describe what was accomplished in the activities included under this category of service during the past quarter. Include just one distinct activity per page. (as listed in your Activity Overview.)

WHAT YOU DID AND WHEN	TO WHOM		WHAT PROGRESS
What did you do to implement the principal activities under this category of service during the past quarter? When were these tasks accomplished?	Describe whom you did affect, influence or involve during the past quarter? Give the numbers of people involved in each principal activity?		Your Plan for this quarter cited certain conditions this activity would try to affect. What indications do you have that there was an effect on, or change in, these conditions?
	<u>WHO:</u>	<u>HOW MANY:</u>	

COMPARE THESE ACCOMPLISHMENTS WITH YOUR ACTION PLAN FOR THIS QUARTER

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Project: _____ Activity: _____

GROWTH REPORT

covering

_____ to _____
mo. yr. mo. yr.

Please return a copy of this form
attached to your Quarterly Summary
for this quarter.

The space below is for your comments on what is happening in your project as activities change and grow in response to needs. Please write freely. You do not have to limit yourself to "positive" incidents. Much value can also be derived from sharing the "what-went-wrong's. The following are only suggestions of the types of information that can indicate what you are learning.

As you compared your Accomplishments last quarter with your earlier plans . . .

(a) You may have found that the assumptions you made about needs or conditions were not completely accurate. If so, what were the needs of the people you actually reached?

(c) Everything may have proceeded as planned. If so, what made it so? If not, what unexpected things occurred? How did you deal with them? Who did you involve? What alternatives did you have?

(b) Was there significant staff personal growth? What influenced it?

(d) Was there significant community involvement? What influenced it?

CHANGE REPORT

covering

____ mo. ____ day ____ yr. to ____ mo. ____ day ____ yr.

PROJECT: _____ ACTIVITY: _____

1. Will your ACTION PLAN for next quarter (on back of this page) be different from what you might have otherwise prepared, because of something you learned or noticed last quarter? If so, will it be a-

Comments:

- Change in HOW you are going to provide the services?
- Change in the number and/or type of PEOPLE you now expect to affect?
- Change in your assumptions about their NEEDS, conditions or problems?
- Change in what you expect can be ACCOMPLISHED?
- Other _____

2. What indications do you have that there is a continuing need for this specific activity? ✓

3. What evidence do you have of your community's present attitude toward this activity? of your staff's attitudes?

4. How do you plan to confirm the changes, or effects you expect to have this quarter?

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NOTE: PLEASE USE ADDITIONAL PAGES IF NECESSARY.