

# Information Center for Administrative Data Implementation Experience at UC Berkeley

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## PURPOSE

FOR THOSE OF YOU who are interested in establishing an information center on your campus, we discuss the implementation of the Administrative Information Center (AIC) at the University of California, Berkeley. Topics we include are:

- Introduction to the AIC
- Objectives and Goals
- Organization
- Services Provided
- Selecting a Service
- Facilities
- Tools: Software and Hardware
- Subscriptions and Recharging for Services
- Plans

We also include a brief Summary at the end of this paper, followed by organization charts of the UC Berkeley Computing Affairs Organization.

## INTRODUCTION TO THE AIC

During the last few years, there has been a growing need on the UC Berkeley campus to support additional administrative computing activities. After considerable research, we determined that an information center approach would fulfill the campus needs for accessing and disseminating administrative data, and, thus, we established the Administrative Information Center.

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Before the AIC was formed, various studies were conducted to determine campus computing needs.<sup>1</sup> The first extensive, campus-wide study identified major problems and projected needs in administrative systems. These findings were published in the 1977 *Needs Assessment Plan*. What followed in the same year was a comprehensive *Information Systems Plan* which outlined the overall coordination and development of campus administrative systems and data bases. The *Information Systems Plan* is updated annually. The *Plan* produced last year reaffirmed the need for easily-accessed administrative data. Research revealed that the campus departments and offices had needs for administrative computing and data that were not being met, including:

- easy access to files and data bases;
- coordination among common data files among functions (such as student or financial areas) so that administrative offices can share information;
- state-of-the-art equipment (hardware and software) to adequately fulfill computing responsibility needs;
- quick turnaround (different services and priorities for different kinds of work);
- inexpensive data retrieval; and
- training in use of software, data access, and retrieval.

## OBJECTIVES AND GOALS

AIC's objective is to meet partially the campus needs for administrative computing and data mentioned above. Specifically, AIC provides administrative users access to data on their own terms and at a minimum cost, so that the users can solve many of their computing and data needs themselves; for the most part, AIC provides the tools and the training, and the user does the rest of the work. The type of work AIC handles are the one-time query, the simple report, the minor change, etc.; AIC may also take on small programming projects that can be done quickly and which will enable a department (or several departments) to retrieve data and produce reports as needed. AIC does not take on projects that require considerable development and which have a campus-wide impact.<sup>2</sup> Services of the AIC are purchased by subscription or are recharged to the departments.

## ORGANIZATION

The AIC is established within the Information Systems Office of the UC Berkeley Computing Affairs Organization.<sup>3</sup> The AIC is divided into three functional units:

1. Retrieval Services
2. Administrative Microcomputer Services
3. Information Center for Administrative Data (mainframe)

The units differ in how data is accessed and in cost to the user, thus providing a range of data access possibilities from which the user can select.

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<sup>1</sup>This was the result of the suspension of the previous common system policy (July 1976) which transferred the authority and responsibility of administrative systems from System-wide to the nine individual campuses of the University of California system.

<sup>2</sup>Those projects are handled by the Development Unit of the Information Systems Office; see the organization charts at the end of this paper.

<sup>3</sup>The Berkeley Computing Affairs Organization is rather large (over 270 employees), and is organized into three functional units: (1) Computer Facilities and Operations, which maintains the equipment, (2) Computing Services, which supports academic computing, and (3) the Information Systems Office, which supports administrative computing. See the organization charts at the end of this paper.

### Retrieval Services

Berkeley Retrieval Services, which was established in 1978 to meet the ad hoc reporting and special informational needs of the campus, is now incorporated in AIC. The main objective of Retrieval is to provide users with information from the campus files and data bases. The user does not need a microcomputer or a terminal; all the work is done by Retrieval Services using software available on various mainframes. The major attribute of this service is the timeliness and flexibility of response to the user; for example, once a department has appropriate approvals for accessing the data base, the request is programmed, tested, and scheduled for a production run usually within an eight hour day. Requests can vary from simple reports using one file to more complex reports involving several files across several systems (for example, student and financial). Currently, Retrieval provides services to 80 administrative departments on a recharge basis.

### Administrative Microcomputer Services

The Administrative Microcomputer Services (AMS) unit, which was established in January 1984, provides technical expertise and support for administrative users in the selection, acquisition, and use of microcomputer hardware and software. Typically, users request microcomputer training, consulting, or software tailoring so that they can then do their own report generating; a total of 17 departments have subscribed to the microcomputing services (10 already have subscriptions for this fiscal year). AMS is also working on some small microcomputer systems for several departments, and several other departments have requested microcomputer-supported operations.

### Information Center for Administrative Data (mainframe)

By the end of October, we expect to announce that the Information Center for Administrative Data (ICAD) is operating (if all the software is in place). ICAD's overall objective is to inform administrative offices on the campus of administrative data available on the mainframe computers, and then to provide technical expertise and training so that those administrative users can access the data. A department that already has terminals and computer accounts (or who is willing to get them) may be interested in this service. Once departments know about data, have authority to access that data, and know how to use mainframe software, they can generate their own reports as needed. For example, ICAD can assist the department that wants to monitor costs or produce monthly reports for specific account/fund summaries, which requires access to the General Ledger System data.

Currently, the AIC has three employees: a supervisor and two analysts. The supervisor reports to the Data Administration and Standards group of the Information Systems Office; see the organization charts at the end of this paper. We expect the staff to grow after we announce the mainframe unit and as requests for services increase. Each analyst is expected to support at least 20 users; each analyst is responsible for two to four software packages, and is expected to develop expertise in the usage of these software packages. Technical staff in the Data Administration and Standards unit assist with the AIC services as needed; for example, they teach some of the classes and they may be called upon to help with some of the AIC programming projects. So, although there are only three official employees in AIC, other employees of the campus administrative computing group assist with some of the AIC services.

### SERVICES PROVIDED

Specific services provided by AIC are described below; information is also included about which unit of AIC provides the service.

#### Ad Hoc Requests for Data and Report

This service is available exclusively through Retrieval Services. Although the user is not involved with the technical aspects of extracting data from the mainframe, the user is highly interested in the end-result, such as reports or labels. Those who use the Berkeley Retrieval Services usually do not have the volume or need

to implement a computing system on their own. Because Retrieval Services has access to all administrative data and the software tools to provide fairly inexpensive reports, users can fulfill their ad hoc reporting needs adequately through this service.

### Technical Consulting

Technical consulting is provided by both the microcomputer unit and the mainframe unit. Consulting services include:

1. analyzing the needs, data requirements, and operating requirements for a given situation,
2. providing expertise in choosing software suitable for a given application (if the software is for a microcomputer, the user is also assisted with the purchasing procedures),
3. providing expertise in choosing the appropriate hardware suitable for a particular application (if the user is buying a microcomputer, rather than using a mainframe, the user will be assisted with the purchasing procedures), and
4. tailoring software for a department's particular needs.

This consulting service is designed to free the user from calling different people and places for technical consultation. One call to AIC connects users to an analyst who can listen to the problem, understand it, and make informed recommendations. In addition to telephone consulting, an analyst may go to the user's location or may research a problem and then get back to the user.

### Access to Software and Hardware

The AMS unit of AIC provides:

1. access to many software packages developed by other campus departments, in cooperation with AMS,
2. on-site (at AIC facilities) trial usage of many commercial software packages for short terms,
3. on-site (at AIC facilities) access to commercial software that ISO has purchased,
4. access to evaluations of hardware and software by Datapro, a major commercial service, and by other computing journals (many publications are available for reading in the AIC library), and
5. special arrangements to use microcomputers already on campus before purchasing a new microcomputer.

The ICAD unit enables users to access data and software on the mainframe computer. If the department does not already have a terminal and wants one, ICAD can help them make arrangements for getting the terminal and the appropriate port connection.

### Access to a Data Dictionary

AIC maintains a data dictionary, from which it produces hardcopies of a data glossary. The glossaries are available to administrative users so that they know what important administrative data are available.

### Access to Campus Mainframe Data

Since ISO is the custodian of all campus administrative data, AIC is able to help departments access some of that data—given proper authorization. In particular, AIC can:

1. ensure that administrative data is relatively easy to access,
2. provide communications between microcomputer and selected campus mainframe computers,
3. provide data file transfer between microcomputers and mainframe computers, and
4. provide access to data and software available on selected mainframe computers.

If the user selects Retrieval Services, AIC accesses the data and prepares the reports. If the user selects

either the microcomputer or mainframe services, it may be necessary for the user to have an account on a mainframe computer in order to access the data. Or, AMS (the microcomputer service) may arrange to have the data transferred to a suitable diskette format for a user.

### Access to Standards and Procedures

AIC provides support and guidelines for:

1. systems analysis and design,
2. documentation,
3. maintenance,
4. designing and program review, and
5. program coding.

Although designing and developing a complete system is a highly complex and time-consuming job, AIC ensures the success of a system as well as its continued reliability and easy maintenance. AIC shares with users its methodologies, guidelines, and standards, and helps optimize users' systems; also, AIC maintains a user's system upon request. The AMS and ICAD units provide this service for microcomputer and mainframes respectively, although it is more applicable to the mainframes.

### Training

The Administrative Microcomputer Service regularly teaches classes on such topics as: Introduction to Microcomputers, Visicalc, Multiplan, dBaseII, Lotus 1-2-3, Wordstar/MailMerge, and BASIC programming. Additional topics, such as Symphony, Framework, and dBase III, will be added. From January 1984 through July 1984, AMS taught 28 classes, which were attended by 163 students; at least 38 administrative offices were represented at the microcomputing classes. Seventeen classes are already scheduled for Fall Semester. These classes are announced in the *Computing Services Short Course Schedule* and the *INSIDE*, which is published by the Personnel Department.

The microcomputer classes are hands-on classes using IBM PCs and IBM XT's. Although many training centers conduct classes where the students share microcomputers, we have found that it is advantageous for each student to have his or her own microcomputer. In our classes, therefore, each student has a microcomputer; the classes are limited to four to six students. Although there is only one instructor per class, we can arrange for an assistant to help in classes where the students need a lot of attention.

The Information Center for Administrative Data plans to offer classes in Data Processing Concepts, WYLBUR, On Line Query, Batch Query Language, EasyMARK (a front-end to MARK IV), etc. Classes in microcomputer to mainframe communications are also planned. These classes will enable users to do their own data retrieval for simple reports, minor changes, short jobs, and one-time queries.

### SELECTING A SERVICE

Once a department is interested in our services, we set up an interview with that department to determine the particular kinds of services that department needs, wants, or can afford. Since we have three units and can provide a range of services in a range of prices, we make several recommendations to the department, and then let the department select.

Some departments come to us with a specific problem to solve which we can handle with a combination of our services. Some departments come with a vague notion that they want to computerize; sometimes we help them define their problem so that they can get started solving the problem themselves, or sometimes we help them define the problem and then proceed to solve the problem for them. Occasionally, a department comes to us with the need for a major system; we refer that department to the Development unit of the Information Systems Office.

## FACILITIES

The Administrative Information Center facility is next to the analysts' offices. The facility contains a library of current computer documentation, journals, reports, etc. and a work area with tables and chairs. If a microcomputer class is scheduled for the room, four to six IBM PCs or IBM XT's are set up. A session may be arranged to train a department to use a Batch Query Language system, for example, to access student profile data for that department; the room will then be set up with a terminal or a microcomputer emulating a terminal (connected to a mainframe). If a user wants to test software or a microcomputer, the room is set up accordingly. Also, users who subscribe to services may arrange to use a terminal or microcomputer at the facilities (if the department terminal is not yet installed, if the microcomputer is broken, etc.). Users must make arrangements to use the facilities.

## TOOLS: SOFTWARE AND HARDWARE

Software packages that the AIC currently uses, consults on, trains on, or has available for use are listed below in a table; new products are added regularly. The AIC only supports software and hardware that are also supported by the central campus computing facility (Computing Services and Computer Facilities and Operations). Although AIC consults on hardware use and helps set up new microcomputers, it does not repair malfunctioning hardware.<sup>4</sup>

Software		
Microcomputer	Mainframe	Communications
BASIC Compiler	Batch Query Language	Apple-IBM Connection
BASIC Programming Development System		Kermit
	CICS	MODEM7
CP/M-86	CMS	YTERM
dBaseII	Culprit	
dBase III5	EasyCulprit <sup>6</sup>	
FORTTRAN	EasyMARK <sup>6</sup>	
Framework <sup>5</sup>	MARK IV	
IBM DOS 1.1 and 2.0	MVS	
IBM 3101 Emulation program	On-line Query	
Lotus 1-2-3	UNIX	
Macro Assembler		
MS-DOS		
Multiplan		
Pascal		
Personal Editor		
Project Scheduler		
Sideways		
Symphony <sup>5</sup>		
UNIX-like <sup>5</sup>		
Visicalc		
WordStar/MailMerge		

## SUBSCRIPTIONS AND RECHARGING FOR SERVICES

Retrieval Services are charged to departments through recharge. Administrative Microcomputer Services are available at both recharge and subscription rates depending on the service requested. Again, programming

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<sup>4</sup>The Hardware and Maintenance unit in Computer Facilities and Operations supports terminal repairs and some installations of ports, etc. See the organization charts at the end of this paper.

<sup>5</sup>Being purchased

<sup>6</sup>Developed locally; EasyCulprit will be developed locally.

tasks must be recharge; but, consulting, training, use of the facilities, software tailoring, etc. can be purchased on either a comprehensive plan or a limited plan for a fiscal year. The Information Center for Administrative Data is expected to have a similar charging structure.

### PLANS

We expect that emphasis will be on training during this next fiscal year; once our administrative users are familiar with mainframes and microcomputers, we expect that we will have more work from those departments. Immediately, we want to focus on announcing the mainframe services and promoting all of the AIC services.

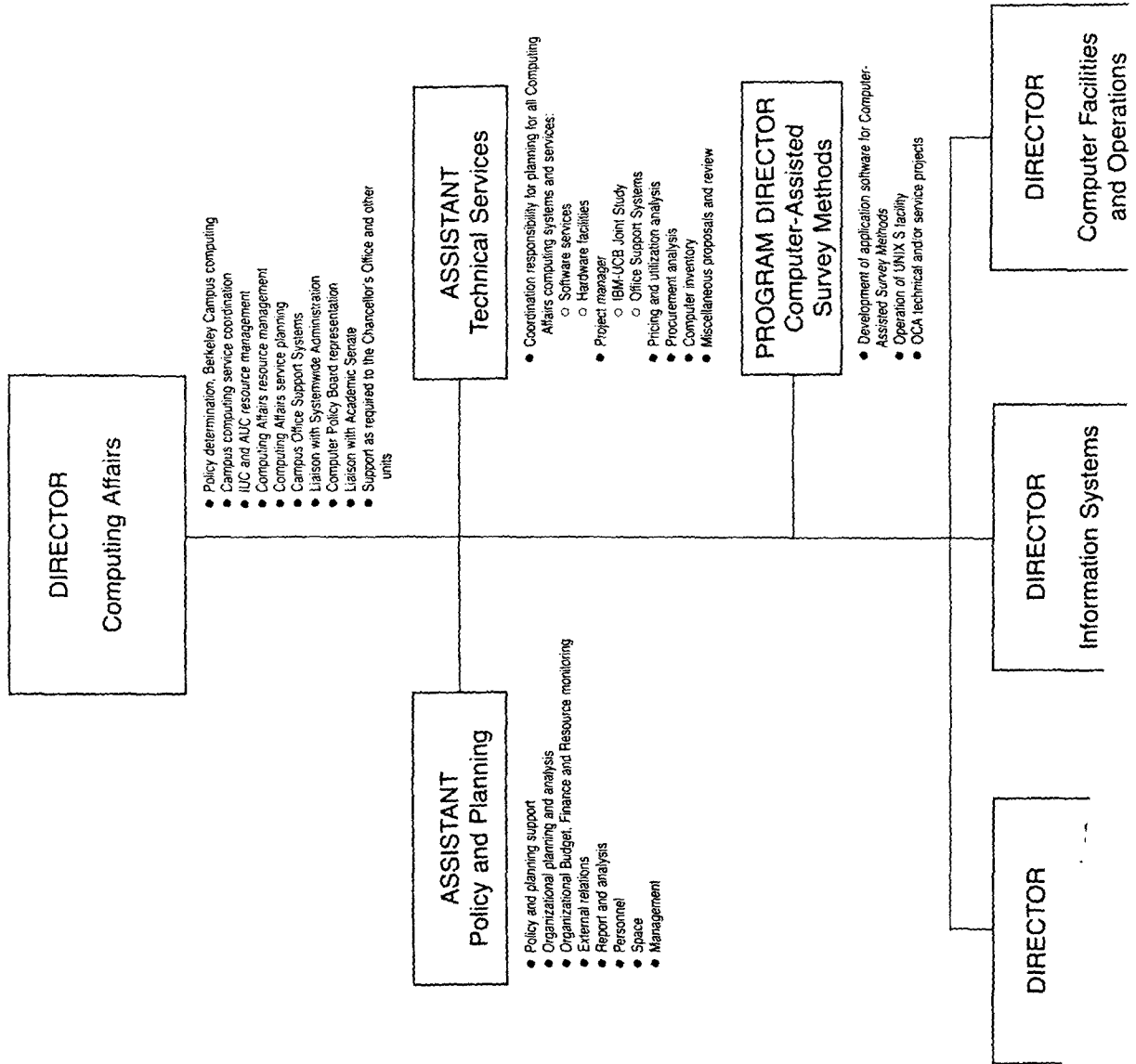
This Fall Semester, we expect to introduce the Information Center for Administrative Data. We are planning an AIC open house, where we will display our facilities and give demonstrations on various services and software. Prior to the open house, we will distribute, to administrative departments, brochures which describe our services and which give schedules for the open house and the demonstrations. Other promotional activities will be planned as needed.

As mentioned earlier, Retrieval Services and Administrative Microcomputer Services are available. We have steady requests for Retrieval Services, and one analyst has been working full-time on those requests. We have more requests for Administrative Microcomputer Services than we can handle; also, 10 departments already subscribe to Microcomputer Services this fiscal year (which gives them a certain number of free hours of consultation per year, among other services). We expect that requests for services will continue to increase (especially after the open house), and that we will need to add additional staff. Since administrative personnel have been wanting easy access to data for many years, we expect the Administrative Information Center to be a popular service.

### SUMMARY

Based on campus need for quick and inexpensive access to administrative data, we formed the Administrative Information Center. The AIC is divided into three units, which access data in different ways and which charge differently for the variety of services provided, giving the user a range of services and costs from which to choose. Both the Retrieval Services and Administrative Microcomputer Services units of the AIC are already providing services; we expect the Information Center for Administrative Data (mainframe) unit to be providing services in the fall. The AIC is still new, and not yet fully implemented. At the convention in November, we expect to have additional implementation experiences to share.

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