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UA8 WKU Administrative Software Project

WKU Information Technology

[1988]

Western Kentucky University Administrative Software Project

Introduction

Western is in the beginning stages of a major computer software project. A number of critical systems will be replaced with commercially-produced software, and additional modules installed as well. The project is expected to require two years and will involve a large percentage of Western's administrative and staff personnel. At the completion of the project, computer-based services will be more functional and markedly more responsive to the community's needs. The software will also be more adaptable to change and considerably less expensive to maintain than our present software.

Background

Western's first computer, a small punch card model, was installed in 1967. In the period 1967-1972 that computer and its replacements, all batch-oriented punch card models, were used for business functions and student registration.

Western installed its first general purpose computer capable of supporting teleprocessing terminals, an IBM type 360 model 40, in 1972. Over the next nine years, until January 1981, when the 360 was replaced, a significant number of application systems were developed by the programming staff. Among those were the following.

1. Teleprocessing Access Method and Monitor, WKU-TP
2. Library Circulation System, on-line
3. Library Cataloging System, on-line
4. Library Union Catalog, batch
5. Student Admission System, on-line
6. Student Records System, on-line
7. Student Registration System, batch/on-line
8. Student Housing System, on-line
9. Budgetary Accounting System, batch
10. Accounts Payable System, batch
11. Personnel System, on-line
12. Payroll System, on-line
13. Alumni System, batch
14. Physical Assets Inventory System, batch
15. Student/Alumni Placement System, on-line
16. Faculty Workload System, batch/on-line.
17. Instructional Indices System, batch/on-line

Since 1980 some of the systems listed have been rewritten or recoded and additional ones developed.

Unmet Needs

Over the past five to eight years, the needs of offices that are supported by the systems listed have been undergoing continuous, and, in some cases, rapid, change. The volume of data and information processed has increased dramatically, and the time interval over which actions must take place have shortened drastically. Additional functions and processes are urgently needed. For example, tighter budgetary control is needed, but a batch accounting system is inherently incapable of reporting up-to-date account balances. The Admissions Office needs to track the status of applicants in ways not previously deemed important. On-line student transcripts are needed for adequate academic counseling. The period between approval of federal funding and the awarding deadline for student financial aid is shrinking. Financial and programmatic accountability has heightened.

One could go on at length citing the litany of needs, but the one dominant underlying need is for system integration. Almost every system installed needs to feed or receive data and information from other systems. The need is for automatic, real-time information sharing. The present reality is information transfer in every mode from the spoken word to printed reports and key-to-disk or terminal data entry, but almost no direct real-time sharing.

The Problem

The problem is that current systems cannot be modified or enhanced to incorporate the functions and features needed. The major reason is that their basic design is unsuitable. The design of current systems was not only crafted to meet the simpler demands of an earlier time, but was dictated in large degree by the limitations in hardware and software in place until 1981. The 360/40 computer was designed in the early 1960's and, by present standards, was very limited. It was retained four or five years longer than planned.

The in-house developed teleprocessing system, WKU-TP, requires the functions of obsolete hardware to process transactions. Current library and student data based systems still use WKU-TP. We have written a very sophisticated interface system that runs on modern equipment, but the functional limitations inherent in WKU-TP still remain. None of the systems that run on WKU-TP can be improved in any significant way.

The Alternatives

There were three possible ways of proceeding, only two of which were reasonable. The three choices were:

1. Rewrite and enhance WKU-TP to run on modern hardware and redesign and rewrite the applications systems.
2. Install IBM's CICS teleprocessing system and redesign and rewrite the application systems.
3. Install CICS and purchase a suitable commercially produced integrated application system package.

Alternative (1) was clearly unacceptable for many reasons and was rejected. The direct costs of alternatives (2) and (3) were estimated to be relatively the same, approximately one million dollars over the life of the project. Alternative (2) would require five to eight years to complete, whereas alternative (3) could be completed in two years. Indirect costs of loss of function and maintenance of our old systems would be considerably greater with (2) than with (3). Accordingly, alternative (3) was adopted and a search was started for suitable software.

The Solution

An extensive study showed that, for our environment, Information Associates System Z software was the best choice. Its functional capabilities are sufficient to meet our needs in a reasonable way without modifications. It possesses the additional features and capabilities needed. Series Z's direct cost in under $600,000, and it could be acquired and paid for over a five-year period within the cash flow constraints imposed. Maintenance and future enhancements are provided under contract by Information Associates. It is a widely-used system, and one can expect that it will stay in the mainstream of technology.

The Work Ahead

Three major systems of Series Z have been acquired as follows.

1. Student Information System, SIS

    a. Admissions
    b. Student records
    c. Registration/grade reporting
    d. Financial aid management
    e. Student accounts billings/receivables

2. Financial Records System, FRS

   a. Financial accounting/reporting
   b. Accounts payable
   c. Budgeting
   d. Grants and contracts management

3. Human Resource System, HRS

   a. Payroll
   b. Personnel/reporting
   c. Position control
   d. Labor distribution

These systems are all integrated through the Series Z Data Base. This relationship is depicted in figure (1) attached. Western acquired the Loan Management System, LMS, some years ago and already has Series Z Data Base installed.

The software implementation will be directed by a Steering Committee composed of the top executives of the University. Since the software does not mirror the organization and procedures at Western exactly, some reorganization between and among units will be required. Some current policies will need to be modified and others formulated. These matters and monitoring the progress of the project will be handled by the Steering Committee.

An implementation Advisory Committee will provide a forum through which information is passed to and from the University community to insure that needs of the community are known and reconciled with the capabilities of the software system. This committee will advise both the Steering Committee and implementation teams.

Two implementation teams have been established, although all members of the teams have not been appointed. One team, headed by Bill Sams, will implement FRS and HRS. A second team, headed by Curtis Logsdon, will implement SIS.

Education and training for Series Z implementation will extend to more than 300 person days, approximately 100 of which will occur in Reston, Virginia or Rochester, New York. The remainder will occur at Western in centers being established. Since the systems are all on-line, much of the training is terminal based. Thirty additional terminals and supporting communications will be required in 1988-89 and an additional twenty in 1989-90.

On completion of the project, services delivered to students, faculty and staff will be much improved. The ready availability of current information and the flexibility of the

system to accommodate change will provide tools that permit direction and control in ways that have not heretofore been possible.