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STUDENT FINANCIAL AID SYSTEMS

Absence of Guiding Architecture Reduces Efficiency, Ease of Use

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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss the results of our just-completed review of the Department of Education's progress in integrating its National Student Loan Data System, or NSLDS, with other student financial aid systems, as required by law. NSLDS was designed to track loan and grant information on programs authorized under title IV of the Higher Education Act of 1965, (HEA) as amended. It also was to provide a research database, and support operations, including prescreening of aid applicants for eligibility and student enrollment status.

For millions of Americans, such student aid programs are the deciding factor in whether postsecondary education is within financial reach. As such, it is critical that the information contained in these systems be accurate. More than $47 billion is to be made available on behalf of about 8 million students for the 1998-99 academic year—about 80 percent of it through student loans.

As described in detail in our report being released at this hearing today,[1] the Department of Education has made only limited progress in integrating NSLDS with the other student financial aid systems that support title IV programs. This is largely because the Department has not developed an overall systems architecture, a framework needed to allow these disparate systems to operate in concert with each other. As a result, while information can be shared among systems, the process is cumbersome, expensive, and unreliable.

Further, the lack of a systems architecture allows the proliferation of individual stand-alone systems. This is expensive, not only with respect to system procurement, operation, and maintenance, but also in terms of efficiency. Such an approach has served immediate program needs on a limited basis, but undermines sharing of student financial aid information across programs. This, in turn, can result in different databases containing different and perhaps conflicting information on the status of a student loan or grant. Our report recommends specific actions that we believe offer a realistic approach as the Department works to address these challenges.

[1]Student Financial Aid Information: Systems Architecture Needed To Improve Programs' Efficiency (GAO/AIMD-97-122, July 29, 1997).

NSLDS Intended to Be Central Repository for Title IV Program Information

Four major sources of student aid are currently available: the Federal Family Education Loan Program (FFELP),[2] the Pell Grant Program, the Federal Direct Loan Program, and Campus-Based Programs.[3] Before the recent 5-year phase-in of the direct loan program, FFELP and the Pell Grant programs were the largest sources of federally financed educational assistance. FFELP provides loans through private lenders; these loans are guaranteed against default by about 36 guaranty agencies nationwide—state and nonprofit private agents of the federal government whose services include, among others, payment of claims on defaulted loans. The loans are ultimately insured by the federal government. The Pell program provides for grants to economically disadvantaged students.

Over the years, both FFELP and the Pell Grant Program have been subject to waste, fraud, and abuse. Because of the limited risks to schools, lenders, and guaranty agencies, and the billions of dollars in available aid, the structure of FFELP created the potential for large losses, sometimes through abuse. In fiscal year 1995, for example, the federal government paid out over $2.5 billion to make good the guarantee on defaulted student loans. In our past work we found that students who had previously defaulted on student loans were nonetheless subsequently able to obtain additional loans.[4] The Pell program has likewise experienced abuse, such as students' receiving grants while attending two or more schools concurrently. Since the inception of the program in 1973, students have been limited to receiving Pell grants from only one school at a time.

The Department's student financial aid programs are one of 25 areas we have categorized as high risk because of vulnerability to waste, fraud, and abuse.[5] Although progress has been made, the Department's controls for ensuring data accuracy and management oversight remain inadequate. The Department has long recognized its significant problems with title IV data reliability. In fact, it reported this as a material weakness under the Federal Managers' Financial Integrity Act. Plans are now underway to address this issue through a major initiative started last December to reconcile NSLDS data with data in the program-specific databases.

[2]Formerly the Guaranteed and Stafford Student Loan programs.

[3]The Campus-Based Programs include the Federal Work-Study Program, the Federal Perkins Loan Program, and the Federal Supplemental Educational Opportunity Grant Program.

[4]Student Financial Aid: Data Not Fully Utilized to Identify Inappropriately Awarded Loans and Grants (GAO/HEHS-95-89, July 11, 1995).

[5]High-Risk Series: Student Financial Aid (GAO/HR-97-11, February 1997).

Similarly, because of the poor quality and unreliability of financial data remaining in the Department's systems, Education staff cannot obtain the complete, accurate data necessary for reporting on its financial position. In fact, the Department's Office of Inspector General was unable to express an opinion on the fiscal year 1994 FFELP principal financial statements, taken as a whole, because of the unreliability of student loan data on which the Department based its expected costs to be incurred on outstanding guaranteed loans. Education received a disclaimer of audit opinion on the 1995 financial statements for the same reason. The Department's acting chief financial officer, therefore, had to present unaudited 1996 financial statements in Education's March 1997 annual accountability report (covering fiscal year 1996). According to this report, the audited statements—with auditor's report—were to be available "around July 31, 1997."

NSLDS was authorized under the 1986 HEA amendments as a means of improving compliance with repayment and loan-limitation provisions, and to help ensure accurate information on student loan indebtedness and institutional lending practices. The 1992 HEA amendments required that Education integrate NSLDS with the databases of the program-specific title IV systems by January 1, 1994. In January 1993 the Department awarded a 5-year, $39-million contract to develop and maintain NSLDS.

Department Actions Fall Short of Full Integration

Despite the mandate of the 1992 HEA amendments—and the conclusions of studies carried out both within Education and by the Advisory Committee on Student Financial Assistance[6]—the Department's actions have fallen short of full integration. Education officials chose to establish NSLDS as a data repository, to receive information from the other title IV systems. Yet operating in such an environment presents complications due to the lack of uniformity in how the systems handle and store information.

The lack of data standards has complicated data matching between systems. To assist in achieving integration[7] of the Department's title IV systems, the 1992 amendments included specific requirements for the establishment of common identifiers and the standardization of data

[6]The committee was created as part of the HEA amendments of 1986; it serves as an independent public advisory body to the Department and to the Congress.

[7]Information *integration* is defined by the National Institute of Standards and Technology as establishment of the appropriate computer hardware/software, methodology, and organizational environment to provide a unified and shared information management capability for a complex business enterprise (Information Management Directions: The Information Challenge, special publication 500-167, September 1989).

reporting formats, including definitions of terms to permit direct comparison of data. This has still not been accomplished. Hence, the NSLDS database cannot be updated without expensive conversion workaround programs. The result is a collection of independent systems, many of which keep data that duplicate information stored in NSLDS. This lack of integration promotes an environment of reduced management efficiency, compromised system integrity, and escalating costs as new stand-alone systems are developed.

While NSLDS was envisioned as the central repository for student financial aid data, it is not readily compatible with most of the other title IV systems. These various systems are operated by several different contractors and have different types of hardware, operating systems, application languages, and database management systems. Along with Education's internal systems, thousands of schools and numerous guaranty agencies also employ disparate systems through which they send data to NSLDS. Therefore, to accept data from these other systems, NSLDS must have the necessary workarounds in place.

Education and its data providers currently use over 300 computer formatting and editing programs—many of them workarounds—to bridge the gaps in this complex computing environment. These programs, however, may themselves introduce errors and that would not be necessary in a fully integrated environment. Such programs contribute to the rapidly escalating costs for the 5-year NSLDS contract—from an original $39 million estimate to about $83 million today.

Department officials have acknowledged that integration is important and has not been fully achieved. They told us, however, that they had little time to consider viable alternatives in designing and implementing NSLDS because of statutory requirements and the large number of diverse organizations from which data had to be gathered.

The nonstandard use of student identifiers by various title IV systems complicates tracking of students across programs, making the task cumbersome and time-consuming. Likewise, identifying institutions can be problematic because multiple identifiers are used; for instance, the same school may have different identifying numbers for each of the title IV programs in which it participates. The 1992 amendments required common institutional identifiers by July 1, 1993; as of now, the Department's plans call for their development and implementation for the 1999-2000 academic year.

Beyond simply having common identifiers, it is important that data standards be established; this is the accepted technique used to govern the conventions for identifying, naming, and formatting data. The absence of such standards usually results at best in confusion, at worst in possible misinformation leading to the improper awarding of aid. Having data standards in place means that everyone within an organization understands the exact meaning of a specific term. While each title IV system uses the format specified by NSLDS to report data, the Department permits each program to use its own data dictionary—defining terms in different ways.

One example of how this disparity can affect program operations can be seen in the differences in how student enrollment status is stored in NSLDS, compared with the system that supports the Pell Grant Program. Properly determining enrollment status is important because students generally begin repaying loans following a 6-month grace period after leaving school. Because NSLDS and the Pell system report enrollment status in different formats—alpha versus numeric—and use different definitions, exact comparisons cannot be made, and queries may well produce inconsistent responses. This can lead to misinterpretations of a student's true enrollment status. Problems such as these resulting from data inconsistencies between systems can take school officials weeks or months to resolve—if they are even detected.

Systems Architecture Essential for Efficient Information Sharing

Over the last decade, computer-based information systems have grown dramatically; with this growth has come vastly increased complexity. As a means of handling such size and complexity, reliance on systems architectures has correspondingly increased. As discussed briefly earlier, an architecture is simply a framework or blueprint to guide and constrain the development and evolution of a collection of related systems. Used in this way, it can help significantly to avoid inconsistent system design and development decisions, and along with them the cost increases and performance shortfalls that usually result.

Leading public and private organizations are today using systems architectures to guide mission-critical systems acquisition, development, and maintenance. The Congress has also recognized the importance of such architectures and their place in improving federal information systems. The Clinger-Cohen Act of 1996 requires department-level chief information officers to develop, maintain, and facilitate the

implementation of integrated systems architectures. And experts in academia have likewise championed this approach.

A systems architecture could significantly help Education in overcoming its continuing problems integrating NSLDS and the other title IV systems. It should also reduce expenses by obviating the need for more stand-alone systems and their requirement for workarounds, since one function of an architecture is to ensure that systems will be interoperable.

Despite the importance of a systems architecture, Education officials have not devoted the time or effort necessary to develop such a blueprint. According to these officials, two factors accounting for this are the Department's focus on responding to legislative mandates and its lack—until recently—of a chief information officer. However, the Department reports that work on an architecture has begun and that it expects completion by June 30, 1998.

We have conducted a preliminary review of the technical portion of the draft architecture, and we believe that Education is underestimating what will be required to fully develop and implement a systems architecture departmentwide. Further, we are concerned that the Department has drafted the technical component before the "logical" component.[8] The logical part should be developed first because it is derived from a strategic information systems planning process that clearly defines the organization's mission, the business functions required to carry out that mission, and the information needed to perform those functions.

Acquisition of Stand-Alone Systems Continues, Increasing Problems and Cost

The Department has a compelling need for a systems architecture that would enable the eventual integration of all title IV systems. In spite of this, however, it continues to acquire multiple stand-alone systems. Today the Department manages 9 major systems, supported by 16 separate contracts, to administer student financial aid programs. They range from legacy mainframe systems, several developed over 15 years ago, to a new client-server system. For the most part, these systems operate independently, and cannot communicate or share data with one another.

They are also expensive. As I mentioned earlier, this is a costly approach to systems acquisition. Our chart, reproduced at the end of this statement,

[8]The *logical* component of an architecture first defines the organization's functions, providing high-level descriptions of its information systems and their interrelationships and specifying how and where information flows. Then, the *technical* component explains operations in technical terms, such as specifying hardware, software, data, communications, security, and performance characteristics.

shows that Education's information technology costs have almost tripled since fiscal year 1994. The reported cost of these systems in fiscal year 1994 was $106 million; for fiscal year 1998 it is expected to be about $317 million.

Many of the systems, including NSLDS, were developed independently over time by multiple contractors responding to new functions, programs, or mandates—and not as part of a long-range, carefully considered systems-design strategy. This has evolved into a patchwork of stovepipe systems that rely heavily on contractor expertise to develop and maintain systems responsible for administering critical student financial aid information.

A case in point: the Department recently awarded separate contracts to three vendors for new, stand-alone systems to service direct loans. Including the original servicer, the total cost for the four systems could be as high as $1.6 billion through fiscal year 2003. This will result in four different servicing systems for the same loan program, inviting problems that stem from a likely lack of systems interoperability.

For over 2 years, the Advisory Committee on Student Financial Assistance has been a consistent voice favoring movement away from this "stovepipe" approach and toward integration. It has attributed deficiencies in the delivery system for student financial aid to the lack of a fully functional, title IV-wide recipient database that could integrate all program operations.

Two years ago, a project was initiated that held the promise of reengineering current processes and developing a system that would integrate all players in the student financial aid community. Called Project EASI, for Easy Access for Students and Institutions, it has endured loose definition, a tentative start, and uncertain commitment from top management. As such, whether it can achieve real process redesign and systems integration is in doubt.[9]

In summary, the Department of Education continues its slow pace toward compliance with the 1992 HEA amendments. While we understand the difficulty of the challenges it faces, we nonetheless believe that the longer the Department waits to develop a sound architecture and integrate its systems, the more difficult and expensive that job will eventually be.

[9]See GAO/HR-97-11, February 1997.

Accordingly, our report recommends that the Secretary of Education direct the Department's chief information officer to develop and enforce a Departmentwide systems architecture by June 30, 1998; that all information technology investments made after that date conform to this architecture; and that funding for all projects be predicated on such conformance, unless thorough, documented analysis supports an exception.

Mr. Chairman, this concludes my statement. I would be pleased to respond to any questions you or other Members of the Subcommittee may have at this time.

Student Financial Aid Systems Contract Costs Over 5 Years

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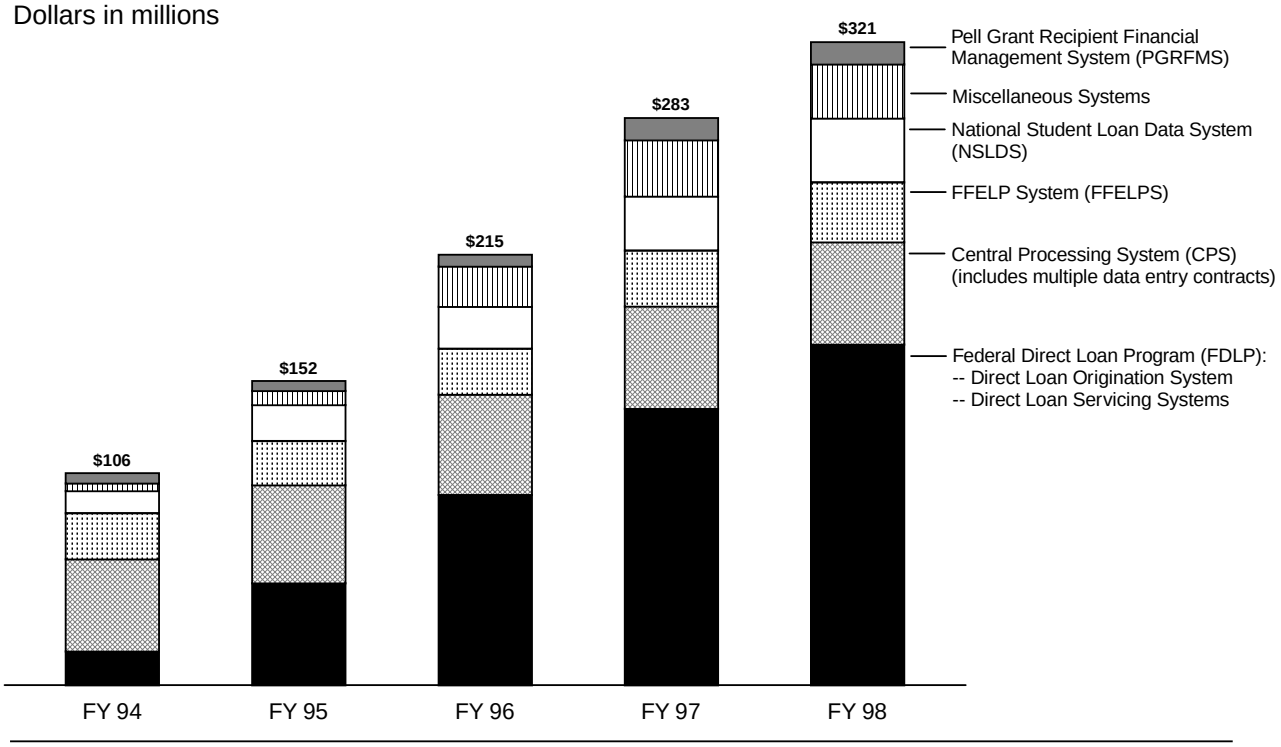

Related GAO Products

Student Financial Aid Information: Systems Architecture Needed To Improve Programs' Efficiency (GAO/AIMD-97-122, July 29, 1997).

Department of Education: Multiple, Nonintegrated Systems Hamper Management of Student Financial Aid Programs (GAO/T-HEHS/AIMD-97-132, May 15, 1997).

High-Risk Series: Student Financial Aid (GAO/HR-97-11, Feb. 1997).

Reporting of Student Loan Enrollment Status (GAO/HEHS-97-44R, Feb. 6, 1997).

Department of Education: Status of Actions To Improve the Management of Student Financial Aid (GAO/HEHS-96-143, July 12, 1996).

Student Financial Aid: Data Not Fully Utilized To Identify Inappropriately Awarded Loans and Grants (GAO/T-HEHS-95-199, July 12, 1995).

Student Financial Aid: Data Not Fully Utilized to Identify Inappropriately Awarded Loans and Grants (GAO/HEHS-95-89, July 11, 1995).

Federal Family Education Loan Information System: Weak Computer Controls Increase Risk of Unauthorized Access to Sensitive Data (GAO/AIMD-95-117, June 12, 1995).

Financial Audit: Federal Family Education Loan Program's Financial Statements for Fiscal Years 1993 and 1992 (GAO/AIMD-94-131, June 30, 1994).

Financial Management: Education's Student Loan Program Controls Over Lenders Need Improvement (GAO/AIMD-93-33, Sept. 9, 1993).

Financial Audit: Guaranteed Student Loan Program's Internal Controls and Structure Need Improvement (GAO/AFMD-93-20, March 16, 1993).

Department of Education: Management Commitment Needed To Improve Information Resources Management (GAO/IMTEC-92-17, April 20, 1992).

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