Final Report on System Proposal – Digital Student Permanent Record Archive

Presented by Set Nazaryan, Douglas Hwang, and Ryan Shahbazi of SDR Consulting Group for Glendale Unified School district
# Table of Contents

Executive Summary ................................................................................................................................. 4

Case Background ........................................................................................................................................ 5

Business Problem and Problem Statements Matrix .................................................................................. 8

  Business Problem ................................................................................................................................... 9
  Problem Statements Matrix ..................................................................................................................... 10

Project Scope and System Objective ........................................................................................................ 11

  Project Scope ....................................................................................................................................... 12
  System Objective .................................................................................................................................. 14

Proposition and Justification ...................................................................................................................... 15

  Proposition .......................................................................................................................................... 16
  Justification ......................................................................................................................................... 17

Current and Proposed System Data Flow Diagrams .................................................................................. 18

  Current System DFD ............................................................................................................................ 19
  Proposed System DFD ............................................................................................................................ 23
    Logical Data Flow Diagrams ................................................................................................................ 25
    Physical Data Flow Diagrams ............................................................................................................... 31

Entity Relationship Diagram, Relational Data Model and Data Dictionary ................................................ 37

  Entity Relationship Diagram ................................................................................................................ 38
  Relational Data Model for Proposed System: DocuNECT at GUSD ....................................................... 39
  Data Dictionary for DocuNECT at GUSD ............................................................................................... 40

Candidate Systems – Solutions Matrix, Feasibility Analysis and Matrix .................................................. 42

  Candidate Systems – Solutions Matrix ................................................................................................. 43

Feasibility .................................................................................................................................................... 44

  Feasibility Matrix ................................................................................................................................. 45
  Feasibility Analysis – Detailed ................................................................................................................. 46

Cost Benefit Analysis of Candidate Solutions .......................................................................................... 49

  Cost Benefit Analysis ............................................................................................................................ 50

Financial Analysis of Candidate Solutions .................................................................................................. 52

  ROI Analysis ....................................................................................................................................... 56

Critical Success Factors and Risk Management .......................................................................................... 57

  Critical Success Factors ....................................................................................................................... 58
Executive Summary
The Student Support Services department at the Glendale Unified School District is facing a problem with the inefficiency of its creation and retrieval of archived student documents.

Student Services has acquired ~40 years of documents that need to be converted into a digital format and indexed for easy retrieval, in order to save time and money. SDR consulting recommends that GUSD implement an ECM solution to manage the student permanent record archive documents in the Student Support Services department. Specifically, based on our analysis, SDR consulting recommends that GUSD implement a solution provided by Portford Solutions Group.

Portford’s DocuNECT solution is a cost effective way to both convert the ~40 years of documents to a managed format and easily retrieve these indexed documents. DocuNECT will cost the district $23,812.60 upon implementation, and $2760.00 per year after that for maintenance and support fees. It will pay for itself, by eliminating the current cost of document conversion (~20,000 per year), in 1.21 years. The system is expected to have a useful life of approximately 10 years and will present a net realizable savings of a projected $102,118.58 (adjusted for time value of money) through its lifetime.

The system can be implemented in as little as 1-2 months and will provide a smooth transition for users because of its ease of use and user-friendly controls. DocuNECT is the most feasible and cost-effective solution.

Attachment: Portford Solutions Group Proposal of DocuNECT
**Case Background**

**Organization:**

Glendale Unified School District

Located in Glendale California, at 223 N. Jackson St.

**Contact Information:**

Frank Schlueter

(818)241-3111 ext. 577

**Activities:**

Glendale Unified School District is a medium sized school district located in Glendale, California. The district includes over 30 schools: including pre-schools, elementary schools, high schools, and special education facilities. The District is centrally managed at an Administration Center, which provides services and special help to school sites throughout the entire district. The Administration Center not only assists school sites, but also provides central services necessary for the survival and betterment of the school district. Departments such as Business Services, Student Support Services, Food Services, Facility Services, and Technology and Information Services (ETIS) provide schools with a solid support center capable of serving their every need. Each department uses a combination of various services offered to them through the Technology and Information Services (ETIS) to allow them to work more effectively to provide support to schools and to support the mission of the school district, “With a vision toward the future and a commitment to excellence, Glendale Unified School District provides quality teaching, ensuring that all students become responsible citizens who possess the knowledge and skills necessary to succeed in an ever-changing world.”
The various departments of the school district all perform various tasks and functions to make sure that they support and deliver to their target, the students. Inefficiencies within any process can reduce the utility provided by the resources required to perform that process, such as money or time – which ultimately equates to money when labor hours are calculated.

**Current Process: Student Data Archives**

The Student Support Services department, directed by Mr. Hank Paz, is responsible for supporting current students, as well as alumni in their endeavors. One of the tasks of their department is to manage and archive student data. The data that is archived consists of student transcript information, behavioral data, and a set of files known as “CUM” (pronounced kyoom) files.

The archived data consists of 10 years of hardcopy (paper) records, 10 years of microfiche records, 10 years of information on one Student Information System (SIS), and 9 years of information on another SIS. Currently, the Student Support Services department is given a budget of 20,000 dollars per year to convert records into a microfiche format, for easier and longer lasting storage. As of 2004, Hank Paz – the director of Student Support Services, has not converted any documents into microfiche with the hope of converting to a managed digital system.

Currently, if a student from who graduated 30 years ago came into the Student Support Services office and requested to see their transcript from when they were in high school, the following would occur. The student would request the document at the student services office. The clerk would take down information about the student and confirm their identity. The clerk
would then have to figure out what form of storage the data is located on (whether it is on paper, microfiche, or stored in one of the older Information Systems). After figuring out the location of the information, they would then attempt to retrieve the student’s data. Retrieving data from the Student Information Systems is not much of a problem, but there are decades of data stored on paper and microfiche. If the record is located in one of those hard formats, the clerk would then have to look through the cargo container and through the many boxes to locate the students information. After the record is located, the clerk would have to make a copy of the information to give to the student (or mail out if necessary), then return the document back to its original location.

With the implementation of an Enterprise Content Management (ECM) solution, records can easily be stored, backed up, managed, and located. An ECM will save a lot of time for the student services department when it comes time to locate archived information.
Business Problem and Problem Statements Matrix
**Business Problem**

The Glendale Unified School District (GUSD) currently has data on all students that attended any of their 30 schools. This data goes back about forty years and is stored in different mediums. There are approximately 60 thousand pages of paper, as well as 60 thousand microfiche films. In addition, there are two Student Information Systems (SIS) that store another twenty years worth of data totally nearly 120 thousands pages. Currently, when a student or official requests this data, the district must conduct a manual search through multiple container rooms for the data. The process can be both tedious and time consuming. If anything becomes misplaced, it can create a disaster scenario for those maintaining this data. If a student loses his or her diploma, this data is the only verification they will have from the district that they attended and graduated from their schools. Digitizing and being able to query this data is an integral aspect of keeping student data readily accessible.
## Problem Statements Matrix

<table>
<thead>
<tr>
<th>Brief statement of problem, opportunity, or directive</th>
<th>Urgency</th>
<th>Visibility</th>
<th>Priority</th>
<th>Proposed Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Digitize all student information</td>
<td>ASAP</td>
<td>HIGH</td>
<td>2</td>
<td>New Development</td>
</tr>
<tr>
<td>2. Make information queryable</td>
<td>ASAP</td>
<td>MEDIUM</td>
<td>1</td>
<td>New Development</td>
</tr>
<tr>
<td>3. Combine multiple archives into one.</td>
<td>ASAP</td>
<td>HIGH</td>
<td>3</td>
<td>New Development</td>
</tr>
</tbody>
</table>

## Problems, Opportunities, Objects, and Constraints Matrix

<table>
<thead>
<tr>
<th>Cause and Effect Analysis</th>
<th>System Improvement Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem</strong></td>
<td><strong>Cause and Effect</strong></td>
</tr>
<tr>
<td>1. Digitize all student information</td>
<td>Information currently stored on microfiche and paper documents. They cannot effectively recall student information.</td>
</tr>
<tr>
<td>2. Make information queryable</td>
<td>The current system requires a manual search through documents to find desired data.</td>
</tr>
<tr>
<td>3. Combine multiple archives into one.</td>
<td>Currently data is stored on paper pages, microfiche and 2 Student Information Systems (SIS). The combination allows for a streamlining of the search.</td>
</tr>
</tbody>
</table>
Project Scope and System Objective
Project Scope

The system must be compatible with all of the computers located within the Glendale Unified School District’s Administration Center. Once system is successfully implemented into the Administration Center’s computers, the system must be able to combine all student records, current and archived, into a single digital database. The system must be compatible with other existing software like Zangle, SASI and Schoolmax in order to transfer all of the existing student records into the new system. The system must also be able to scan and upload older student records, which are in paper and microfiche formats.

Once all of the student records are digitized into one central database, the system must have a login screen for clerks to gain access into the system. The login screen is not only for gaining access, but also serves as a security measure. Logging in prevents unauthorized access and also annotates who logged on to the system (login history). When the user logs in to the system, the system must allow the user to retrieve archived documents for any student that has ever attended that particular school. The system must have search fields, such as Last Name, First Name, Social Security Number, etc., so that the documents can be retrieved quickly and efficiently. Once the search results are gathered, the system should be able to query the database for matching results.

The system must have a record viewer so that the user can verify that the student records belong to the right person. The record viewer will have an option for viewing, deleting, downloading, printing, email, linking, commenting and viewing the history of the document. As mentioned before, the system must be able to scan and upload documents for new students entering the school district. After the new documents are uploaded, the system must be able to
add the documents in their existing database. The system must also have a completed transaction page to ensure that no errors occurred during the upload. Finally, the system must have a log out option, so that the user can end their session.

This system requires no additional components to be added to the Administration Center’s computers for document viewing, printing or uploading, therefore it is very flexible. Help and support is provided by the system administrators, therefore the Glendale Unified School District’s staff will save money by not having to worry about troubleshooting and maintenance. Some other benefits that these objectives will achieve are faster data processing, reduction of storage space, improved data storage and maintenance, search capabilities, automated processes and cost reduction.
System Objective

The purpose of this project is to restructure the current archive management system used by the Glendale Unified School District. The school district is centrally managed by the Administration Center, which provides support and services to all the schools located in the district. Within the Administration Center, there is the Student Support Services Department, who is responsible for supporting current students as well as the school’s alumni. One of their many tasks is to manage and store student data. The archived data consists of student transcript information, behavioral data and a set of relevant files known as “CUM” files. The problem is that the way that the Student Support Services Department stores, manages and retrieves data is unorganized and very outdated. This inefficiency is costing the Glendale Unified School District time and money, which can be implemented in a more constructive manner. Our firm, SDR Consulting, noticed that the archive management system is outdated and needs to be revised for better productivity. We are recommending an Enterprise Content Management (ECM) solution to rectify this problem.

The system should allow users to create, capture, store and utilize a plethora of documents. Once the documents are uploaded into the system, the document management system should provide at least the following minimum benefits:

- Document storage and retrieval by document index data.
- Document security
- Access auditing
Proposition and Justification
**Proposition**

In order to fulfill the requirements of the project, the solution that Glendale Unified School District adopts needs to meet or exceed the requirements set forth by Mr. Hank Paz and our team. Taking into careful consideration these requirements and needs, our team has selected a solution offered by Portford Solutions Group Inc. (Portford) to take care of the needs of the Glendale Unified School District’s Student Services Department’s Digital Student Archive project. We also present to you, for your consideration, two candidate solutions that we compared to Portford’s and found to be lacking in certain areas. The two solutions and their respective analysis is shown throughout the report for comparison purposes, as well as to showcase their offerings – should GUSD prefer to go with one of these other candidate solutions.

Portford offers a hosted ECM solution with all of the document handling abilities that GUSD is looking for. Users of the system can search via the various indexed entries using one of six index values requested. The system also allows the retrieved information to be viewed in a simple PDF-like viewer using the simple web page, and of course the ability to print the retrieved pages. Although not requested, the option to add new pages to the ECM is also available. With a simple upload and index feature, users are able to add new pages and index them properly by inputting the six index values. The Portford solution has a lifespan of at least 20 years and is very cost effective.
**Justification**
The Portford solution, which will from here on be known as “DocuNECT,” offers all of the features that GUSD is looking for, with the addition of features that allow for a longer lifespan to the solution, all at a low packaged cost. The solution costs $23,812.60 for initial scanning and setup and includes a monthly fee of approximately $230.00 – depending on how many users will be assigned to the system. This price alone is a big improvement over the microfiche conversion budget used in the past ($20,000 per year). The ROI graphs shown later on will prove the financial viability of this proposition. When compared to the archiving budget available to Student Support Services in the past, the Portford solution offers an incredible discount. DocuNECT is also a very easy to use system, with a user-friendly online GUI system that can be used from any computer with internet access. DocuNECT is requires no components to be installed on the computer for document viewing or printing, and thus is very flexible. The use of an entire packaged solution offered by Portford makes it easy on the staff of GUSD because it allows for easy access to help and support (some of the monthly fee is paid for maintenance and support), and saves GUSD staff troubleshooting and maintenance time. Through our analysis, our team has witnessed Portford’s solution scanning solution and DocuNECT to be the most viable solution to convert and store digital records of student permanent records.
Current and Proposed System Data Flow Diagrams
Current System DFD

System Outline

System: Retrieval of Archived Student Documents @ Glendale Unified School District

Entities: Student, Clerk, Service Department

Data Flows:

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request</td>
<td>Student Records</td>
</tr>
<tr>
<td>Student Information</td>
<td>Transaction Slip</td>
</tr>
</tbody>
</table>

Tasks:

1.0 - Receive Request for Student Records

2.0 - Process Request

2.1 - Gather Student Information

2.2 - Confirm Identity

2.3 - Check Graduation Date of Student

2.4 - Retrieve Student Records

2.5 - Retrieve Student Records from Database

2.6 - Retrieve Student Records from Storage

2.7 - Print Student Records

2.8 - Make Copy of Student Records

2.9 - Return Hard copy or Microfiche to Storage Container

3.0 - Finish Transaction

3.1 - Give Records and Transaction Slip to the Student

3.2 - File Transaction Slip in Student Support Services Department

Data Stores:

- Job Order
- Database (Schoolmax & SASI)
- Storage (Hard Copy & Microfiche)
Proposed System DFD

Proposed System Outline: Conversion

Entities:

- Paper Records
- Microfiche
- Student Information System I
- Student Information System II
- DocuNECT

Input:

1. Student Information

Output:

1. Converted Data

Processes:

1.0 Paper Scanning
2.0 DocuNECT Conversion

Data Stores:

1. Search Index
2. Student Data
**Proposed System Outline: Retrieval**

*Entities:*

1. DocuNECT
2. Student

*Input:*

1. Forms
2. ID
3. Student Information
4. Archived Records

*Output:*

1. Invalid Form
2. Identity Confirmation
3. Delivery Notification
4. Packaged Records
5. Retrieved Data
6. Digital Records

*Processes:*

1.0 Student Verification
2.0 Record Retrieval

2.1 DocuNECT Access

2.2 Prep Delivery

3.0 Record Delivery

3.1 Data Printing

3.2 Mail Preparation

*Data Stores:*

1. Search Index
2. Student Data
3. Delivery Files
Level 0 DFD for GUSD
Data Conversion

Paper Records

Microfiche

Student Info System 1

Student Info System 2

1.0
Paper Scanning

1 Search Index
2 Student Data

2.0
DocuNECT Conversion

1 Search Index
2 Student Data
Context Diagram for GUSD
Archived Data Retrieval

Student

Convert Data

DocuNECT
Level 0 DFD for GUSD
Archived Data Retrieval

1.0
Student Verification

1 Search Index
2 Student Data

2.0
Record Retrieval

DocuNECT

3.0
Record Delivery

Student

Form ID
Invalid form

Confirmed Identity

Archived records

Delivery Notification

Packaged records
Level 1 DFD for GUSD
Record Retrieval

2.1
DocuNECT Access

2.2
Prep Delivery

Student Validation

Confirmed identity

Record Delivery

Delivery notification

Archived records

Retrieved Data

Prepared Data

3 Delivery Files
Level 1 DFD for GUSD
Record Retrieval

3.1
Data Printing

3.2
Mail Preparation

Record Retrieval

Record Delivery

Delivery Notification

Physical Data

Packaged Records

Archived records

3 Delivery Files

30
Context Diagram for GUSD Data Conversion

Paper Records

Microfiche

Student Info System 1

Student Info System 2

Convert Data

DocuNECT

Student Data

Converted Data
Level 0 DFD for GUSD
Data Conversion

Paper Records

Microfiche

Student Info System 1

Student Info System 2

DocuNECT

1.0
Paper Scanning

Student Data

Student Data

Student Data

Portford Solutions

System Access

2.0
DocuNECT Conversion

Portford Solutions

1 Search Index

Search Index

1 Student Data

2 Student Data

Digital Data

Converted Data
Context Diagram for GUSD
Archived Data Retrieval

Student \rightarrow \text{Convert Data} \rightarrow \text{DocuNECT}

Forms, ID \rightarrow \text{Packaged records}

Archived records
Level 0 DFD for GUSD
Archived Data Retrieval

1.0
Student Verification

1. Search Index
2. Student Data

Student

1. Form ID
2. Invalid form

Student info

1. Confirmed Identity

2. Student info

2.0
Record Retrieval

3.0
Record Delivery

1. Delivered Records
2. Package records

Student

Record

1. Clearing users
2. Delivery Notification

Archived records

DocuNECT

Mailroom Staff
Level 1 DFD for GUSD
Record Retrieval

2.1
DocuNECT Access
- Cleared Users
- Archived records

2.2
Prep Delivery
- Cleared Users
- Prepared Data

3 Delivery Files

Student Validation
Confirmed Identity

Record Delivery
Delivery notification
Level 1 DFD for GUSD
Record Retrieval

3.1 Data Printing
Mailroom Staff
Physical Data

3.2 Mail Preparation
Mailroom Staff

Record Retrieval
Record Delivery

Delivery Notification
Packaged Records

Archived records
3 Delivery Files
Entity Relationship Diagram, Relational Data Model and Data Dictionary
Relational Data Model for Proposed System: DocuNECT at GUSD

**Student**  
(StudentID, FName, LName, StuID, DOB, GradSchool, GradDate)

**Document**  
(DocID, UploadDate, UserName, StudentID, DocumentLocation)

**User**  
(UserName, Email, Password)

**History**  
(DocID, UserName, ActionID, Time)

**Action**  
(ActionID, ActionName)
<table>
<thead>
<tr>
<th>Table</th>
<th>Attribute</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>StudentID</td>
<td>Numeric</td>
<td>9</td>
<td>Identifier</td>
</tr>
<tr>
<td></td>
<td>FName</td>
<td>Text</td>
<td>15</td>
<td>First name of the student who the record belongs to</td>
</tr>
<tr>
<td></td>
<td>LName</td>
<td>Text</td>
<td>25</td>
<td>Last name of the student who the record belongs to</td>
</tr>
<tr>
<td></td>
<td>StuID</td>
<td>Numeric</td>
<td>9</td>
<td>Student ID # of the student who the record belongs to</td>
</tr>
<tr>
<td></td>
<td>DOB</td>
<td>Date</td>
<td>xx/xx/xxxx</td>
<td>Date of Birth of the student who the record belongs to</td>
</tr>
<tr>
<td></td>
<td>GradSchool</td>
<td>Text</td>
<td>15</td>
<td>The school the student who the record belongs to graduated from</td>
</tr>
<tr>
<td></td>
<td>GradDate</td>
<td>Numeric</td>
<td>4</td>
<td>The graduation year of the student who the record belongs to</td>
</tr>
<tr>
<td>Document</td>
<td>DocID</td>
<td>Numeric</td>
<td>10</td>
<td>Identifier</td>
</tr>
<tr>
<td></td>
<td>UploadDate</td>
<td>Date</td>
<td>xx/xx/xxxx</td>
<td>The date the record was uploaded to the system</td>
</tr>
<tr>
<td></td>
<td>UserName</td>
<td>Text</td>
<td>17</td>
<td>Username of the user that uploaded the record</td>
</tr>
<tr>
<td></td>
<td>StudentID</td>
<td>Numeric</td>
<td>9</td>
<td>StudentID(identifier) that this document corresponds to</td>
</tr>
<tr>
<td></td>
<td>DocumentLocation</td>
<td>HyperLink</td>
<td></td>
<td>Location of the document</td>
</tr>
<tr>
<td>User</td>
<td>UserName</td>
<td>Text</td>
<td>17</td>
<td>Identifier, username of person using the system</td>
</tr>
<tr>
<td></td>
<td>Email</td>
<td>Text</td>
<td>50</td>
<td>Email address of the user</td>
</tr>
<tr>
<td></td>
<td>Password</td>
<td>Text, Encrypted</td>
<td></td>
<td>password of the user encrypted with a 128 bit encryption key and stored in encrypted form</td>
</tr>
<tr>
<td>Table</td>
<td>Attribute</td>
<td>Type</td>
<td>Size</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>------------</td>
<td>------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>History</td>
<td>DocID</td>
<td>Numeric</td>
<td>10</td>
<td>Document ID of the document that was modified or accessed</td>
</tr>
<tr>
<td></td>
<td>UserName</td>
<td>Text</td>
<td>17</td>
<td>Username of the user that performed a specific action on the document</td>
</tr>
<tr>
<td></td>
<td>ActionID</td>
<td>Numeric</td>
<td>3</td>
<td>Identifier</td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>Date/Time</td>
<td>25</td>
<td>Date and time the action was performed</td>
</tr>
<tr>
<td>Action</td>
<td>ActionID</td>
<td>Numeric</td>
<td>3</td>
<td>Identifier</td>
</tr>
<tr>
<td></td>
<td>ActionName</td>
<td>Text</td>
<td>25</td>
<td>Description of the action that can be performed (example: print, comment, etc.)</td>
</tr>
</tbody>
</table>
Candidate Systems – Solutions Matrix, Feasibility Analysis and Matrix
## Candidate Systems – Solutions Matrix

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Candidate 1</th>
<th>Candidate 2</th>
<th>Candidate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Name</strong></td>
<td>Data Microimaging Company</td>
<td>DocuNECT</td>
<td>IBM Filenet P8</td>
</tr>
<tr>
<td><strong>Benefits</strong></td>
<td>Only a 1 time fee, no reoccurring charges</td>
<td>Easy to use, documents can be added, very little setup required.</td>
<td>Powerful ECM solution, can handle documents very well and can be upgraded later to be used for other departmental purposes.</td>
</tr>
<tr>
<td><strong>Equipment</strong></td>
<td>No new equipment required</td>
<td>No new equipment required</td>
<td>No new equipment required, can be hosted on one of the several rack mounted Dell servers currently in stock.</td>
</tr>
<tr>
<td><strong>Presentation of Data</strong></td>
<td>Data is sent to us scanned and indexed on CDs, can use the software with the CD to access the indexed documents or copy the scanned image files to other locations, unindexed.</td>
<td>Data is hosted in an online environment, an easy to use interface is available running on the Java platform, that allows users to view, comment, print, delete, and append documents.</td>
<td>Software and data is hosted in shop, data can be managed and backed up to GUSD standards. Simple FileNet web interface can be used to manage documents, able to do all of what candidate 2 can do.</td>
</tr>
</tbody>
</table>
Feasibility

The following section will analyze the feasibility of the various candidate solutions in one of four categories: Operational Feasibility, Technical Feasibility, Economic Feasibility, and Schedule Feasibility.

**Operational Feasibility**: the degree to which a particular solution is capable of handling the operational needs of the organization and its users.

**Technical Feasibility**: the degree to which a candidate is practical in terms of technical resources and the expertise of IT staff.

**Economic Feasibility**: the degree to which a candidate is economically cost-effective and practical.

**Schedule Feasibility**: the degree to which a candidate is able to be fully deployed within a practical time frame.
# Feasibility Matrix

<table>
<thead>
<tr>
<th>Feasibility Criteria</th>
<th>Weight</th>
<th>Candidate 1</th>
<th>Candidate 2</th>
<th>Candidate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Name</strong></td>
<td></td>
<td>Data Microimaging Company</td>
<td>DocuNECT</td>
<td>IBM Filenet P8</td>
</tr>
<tr>
<td></td>
<td>40%</td>
<td>Does not provide remote access to information. Information is stored on CDs and CDs must be passed around to access student records.</td>
<td>Easy to use, documents can be viewed from any computer with internet access, handles all of the jobs needed by Student Support Services.</td>
<td>See Candidate 2. This candidate is also more powerful than Candidate 2, provides an ECM solution that will do more than that which is required by Student Support Services.</td>
</tr>
<tr>
<td><strong>Operational Feasibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score:</td>
<td></td>
<td>60</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>Technical Feasibility</strong></td>
<td>15%</td>
<td>Will work on any PC computer in GUSD</td>
<td>Will work on any computer with internet access and Java client installed.</td>
<td>Initial setup requires a dedicated server and storage, will take the labor of the network administrators to setup and maintain. The network administrators are comfortable with the setup process, however it will take many labor hours to set-up initially.</td>
</tr>
<tr>
<td>Score:</td>
<td></td>
<td>100</td>
<td>95</td>
<td>85</td>
</tr>
<tr>
<td><strong>Economic Feasibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Cost:</td>
<td>40%</td>
<td>$45,036</td>
<td>$23,812.60</td>
<td>~$125,000.00</td>
</tr>
<tr>
<td>Monthly Cost:</td>
<td></td>
<td>0</td>
<td>$230.00</td>
<td>0</td>
</tr>
<tr>
<td>Payback Period(years):</td>
<td></td>
<td>2.415</td>
<td>1.21</td>
<td>8.818</td>
</tr>
<tr>
<td>Net Present Value(10 yrs):</td>
<td></td>
<td>$97,854.00</td>
<td>$102,118.58</td>
<td>$17,890.00</td>
</tr>
<tr>
<td>Score:</td>
<td></td>
<td>85</td>
<td>100</td>
<td>10</td>
</tr>
<tr>
<td><strong>Schedule Feasibility</strong></td>
<td>5%</td>
<td>1 month, from pickup to return of documents and CDs</td>
<td>1-2 months from pickup of documents to full operation of system.</td>
<td>2-4 months, from pickup of documents to full operation of system.</td>
</tr>
<tr>
<td>Score:</td>
<td></td>
<td>100</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td><strong>Total Weighted Average:</strong></td>
<td>100%</td>
<td>78</td>
<td>98.75</td>
<td>60.75</td>
</tr>
<tr>
<td><strong>Rank</strong></td>
<td></td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
Feasibility Analysis – Detailed
Candidate 1

Operational Feasibility

This candidate is not very operationally feasible. Although CDs (the media that this solution comes on) are very easy to use, they just are not the best method for clerks to access student records. In addition, CDs are less dependable than paper records would be and usually have a shorter lifespan.

Technical Feasibility

The solution offered by Data Microimaging Company is very technically feasible. They put all the information on easy to use CDs, which can be used on any PC computer that is found in GUSD.

Economic Feasibility

Based on accounting analysis and projections, this candidate is economically viable. With a payback period of just slightly over 2 years, the project will be paid for in no time and will save the district ~$97,854.00 over its 10 year lifespan.

Schedule Feasibility

Although the project is not a rush – implementation can take up to a year’s time and it will not affect regular operation – this candidate has the shortest deployment time and thus is most feasible with regards to deployment schedule.
Candidate 2

Operational Feasibility

The ease of use and ability to handle all of the needs of GUSD, make candidate 2 very operationally feasible. The software is easy to learn so users will not have a hard time picking it up, and it will save them a lot of hard work looking for archived records.

Technical Feasibility

Since most of the technical details are handled by Portford Solutions Group, candidate 2 is very technically feasible. GUSD staff will not be required to do anything on their end to make sure the software works – if the software breaks, the company will be required to fix it under their terms of service.

Economic Feasibility

Candidate 2 is the most economically feasible candidate, with a payback period of just 1.21 years, it pays for itself in no time. This candidate will also provide ~$102,118.58 savings over the course of its 10 year life.

Schedule Feasibility

This candidate can be fully deployed in less than 2 months. As an added bonus, Portford has included within its agreement that in the case of a document being needed while it is at their scanning facility waiting to be scanned, they will retrieve the document for GUSD at no extra cost.
Candidate 3

Operational Feasibility

Provides all of the benefits of Candidate 2, with the addition of a greater ability for expansion. This candidate is a full ECM solution and can be used to perform all of the document management needs of the entire district.

Technical Feasibility

Filenet P8 is a solution that needs to be setup and maintained by the network administrators at GUSD. One of the spare Dell rackmount servers also needs to be used to host the software, and additional storage is necessary to support the estimated 30-50 gigabytes of document image files.

Economic Feasibility

Because of the very high upfront cost that IBM charges for the system, this candidate becomes the least economically feasible candidate. It would take an estimated 8.818 years to save on the enough money to cover the costs of the initial investment. Over its 10 year lifespan, the system is only estimated to provide a savings of $17,890.00, a significant difference compared to the other two candidates.

Schedule Feasibility

This candidate can be fully deployed in less than 4 months, although this schedule could easily change based on the availability and workload of the network administrators.
Cost Benefit Analysis of Candidate Solutions
Cost Benefit Analysis

Candidate 1

Candidate 1 has a moderate initial setup cost of 45,036 which is paid off in savings across 2.415 years. With a NPV over the 10 years of its lifespan of $97,854, this candidate offers a good cost to benefit ratio. Although its cost to benefit ratio is rather low, this candidate is not as user friendly or easy to access as the other candidates, this loss of user-friendliness should be considered a cost.

Candidate 2

Candidate 2 has the lowest initial setup cost of $23,812.6 but has a monthly cost of about $230.00, which is $2760 per year, and can paid off in savings in just 1.21 years. With a NPV over the 10 years of its lifespan of $102,118.58, this candidate is the most economically viable and provides the lowest cost to benefit ratio. The system is also easy to use and user friendly, providing an added benefit that cannot be monetized.

Candidate 3

Candidate 3 has the largest initial setup cost of ~125,000 (this number is an estimate given to us by Jeskell Inc., our IBM Filenet P8 vendor, they have not yet prepared a proposal for us with a quote) but no monthly costs, it will pay for itself in savings in 8.818 years. With an NPV over 10 years of its lifespan of $17,890.00 it is the least economically viable solution and does not provide enough of a benefit to be considered for serving just Student Support Services. However, because Filenet P8 is a powerful ECM solution, it can be expanded to
support document management for other GUSD departments as well and should be considered for that purpose.
Financial Analysis of Candidate Solutions
### Candidate 10 Year Analysis

<table>
<thead>
<tr>
<th></th>
<th>Current Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Cost</strong></td>
<td>$45,036</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td><strong>Annual Costs</strong></td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

**PV Factor for 10%**

<table>
<thead>
<tr>
<th>Year</th>
<th>PV Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0.9091</td>
</tr>
<tr>
<td>3</td>
<td>0.8264</td>
</tr>
<tr>
<td>4</td>
<td>0.7513</td>
</tr>
</tbody>
</table>

**Present Value of Costs**

<table>
<thead>
<tr>
<th>Year</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$45,036.00</td>
</tr>
<tr>
<td>2</td>
<td>$0.00</td>
</tr>
<tr>
<td>3</td>
<td>$0.00</td>
</tr>
<tr>
<td>4</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

**Present Value of Current Annual Costs (prior to system)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>2</td>
<td>$18,182.00</td>
</tr>
<tr>
<td>3</td>
<td>$16,528.00</td>
</tr>
<tr>
<td>4</td>
<td>$15,026.00</td>
</tr>
</tbody>
</table>

**Net Savings (total up to year)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-$25,036.00</td>
</tr>
<tr>
<td>2</td>
<td>-$6,854.00</td>
</tr>
<tr>
<td>3</td>
<td>$9,674.00</td>
</tr>
<tr>
<td>4</td>
<td>$24,700.00</td>
</tr>
</tbody>
</table>

**Total NPV of Costs Savings over 10 years**

<table>
<thead>
<tr>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>0.683</td>
<td>0.6209</td>
<td>0.5645</td>
<td>0.5132</td>
<td>0.4665</td>
<td>0.4241</td>
<td>0.3855</td>
<td></td>
</tr>
<tr>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$45,036.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$13,660.00</td>
<td>$12,418.00</td>
<td>$11,290.00</td>
<td>$10,264.00</td>
<td>$9,330.00</td>
<td>$8,482.00</td>
<td>$7,710.00</td>
<td>$142,890.00</td>
</tr>
<tr>
<td>$38,360.00</td>
<td>$50,778.00</td>
<td>$62,068.00</td>
<td>$72,332.00</td>
<td>$81,662.00</td>
<td>$90,144.00</td>
<td>$97,854.00</td>
<td></td>
</tr>
</tbody>
</table>

**Total NPV:** $97,854.00
<table>
<thead>
<tr>
<th>Candidate 2</th>
<th>10 Year Analysis</th>
<th>Current Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Cost</td>
<td>$23,812.60</td>
<td>$0.00</td>
<td>$2,760.00</td>
<td>$2,760.00</td>
<td>$2,760.00</td>
</tr>
<tr>
<td>Annual Costs</td>
<td>1</td>
<td>0.9091</td>
<td>0.8264</td>
<td>0.7513</td>
<td></td>
</tr>
<tr>
<td>PV Factor for 10%</td>
<td>$23,812.60</td>
<td>$2,509.12</td>
<td>$2,280.86</td>
<td>$2,073.59</td>
<td></td>
</tr>
<tr>
<td>Present Value of Costs</td>
<td>$20,000.00</td>
<td>$18,182.00</td>
<td>$16,528.00</td>
<td>$15,026.00</td>
<td></td>
</tr>
<tr>
<td>(prior to system)</td>
<td>-$3,812.60</td>
<td>$11,860.28</td>
<td>$26,107.42</td>
<td>$39,059.83</td>
<td></td>
</tr>
</tbody>
</table>

Net Savings (total up to year) = $20,000.00 - $3,812.60 = $16,187.40

Total NPV of Costs Savings over 10 years = $16,187.40 + $2,509.12 + $2,280.86 + $2,073.59 = $23,050.87

<table>
<thead>
<tr>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,760.00</td>
<td>$2,760.00</td>
<td>$2,760.00</td>
<td>$2,760.00</td>
<td>$2,760.00</td>
<td>$2,760.00</td>
<td>$2,760.00</td>
<td>$13,660.00</td>
</tr>
<tr>
<td>0.683</td>
<td>0.6209</td>
<td>0.5645</td>
<td>0.5132</td>
<td>0.4665</td>
<td>0.4241</td>
<td>0.3855</td>
<td>$142,890.00</td>
</tr>
<tr>
<td>$1,885.08</td>
<td>$1,713.68</td>
<td>$1,558.02</td>
<td>$1,416.43</td>
<td>$1,287.54</td>
<td>$1,170.52</td>
<td>$1,063.98</td>
<td>$40,771.42</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$13,660.00</td>
<td>$12,418.00</td>
<td>$11,290.00</td>
<td>$10,264.00</td>
<td>$9,330.00</td>
<td>$8,482.00</td>
<td>$7,710.00</td>
<td>$142,890.00</td>
</tr>
<tr>
<td>$50,834.75</td>
<td>$61,539.07</td>
<td>$71,271.05</td>
<td>$80,118.62</td>
<td>$88,161.08</td>
<td>$95,472.56</td>
<td>$102,118.58</td>
<td>$102,118.58</td>
</tr>
<tr>
<td>Candidate</td>
<td>10 Year Analysis</td>
<td>Current Year</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>--------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidate 3</td>
<td>Initial Cost</td>
<td>~$125,000</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual Costs</td>
<td>1</td>
<td>0.9091</td>
<td>0.8264</td>
<td>0.7513</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PV Factor for 10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present Value of Costs</td>
<td></td>
<td>$125,000.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present Value of Current Costs (prior to system)</td>
<td></td>
<td>$20,000.00</td>
<td>$18,182.00</td>
<td>$16,528.00</td>
<td>$15,026.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Savings (total up to year)</td>
<td></td>
<td>-$105,000.00</td>
<td>$86,818.00</td>
<td>$70,290.00</td>
<td>$55,264.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total NPV of Costs Savings over 10 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td></td>
<td>0.683</td>
<td>0.6209</td>
<td>0.5645</td>
<td>0.5132</td>
<td>0.4665</td>
<td>0.4241</td>
<td>0.3855</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$125,000.00</td>
</tr>
<tr>
<td></td>
<td>$13,660.00</td>
<td>$12,418.00</td>
<td>$11,290.00</td>
<td>$10,264.00</td>
<td>$9,330.00</td>
<td>$8,482.00</td>
<td>$7,710.00</td>
<td>$142,890.00</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$41,604.00</td>
<td>-$29,186.00</td>
<td>$17,896.00</td>
<td>-$7,632.00</td>
<td>$1,698.00</td>
<td>$10,180.00</td>
<td>$17,890.00</td>
<td></td>
</tr>
</tbody>
</table>

$17,890.00
## ROI Analysis

<table>
<thead>
<tr>
<th>Candidate 1</th>
<th>Estimated Lifetime Benefit</th>
<th>$97,854.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated Lifetime Costs</td>
<td>$45,036.00</td>
</tr>
<tr>
<td></td>
<td>ROI over Lifetime</td>
<td>217.28%</td>
</tr>
<tr>
<td></td>
<td>Annual ROI</td>
<td>21.73%</td>
</tr>
<tr>
<td>Candidate 2</td>
<td>Estimated Lifetime Benefit</td>
<td>$102,118.58</td>
</tr>
<tr>
<td></td>
<td>Estimated Lifetime Costs</td>
<td>$40,771.42</td>
</tr>
<tr>
<td></td>
<td>ROI over Lifetime</td>
<td>250.47%</td>
</tr>
<tr>
<td></td>
<td>Annual ROI</td>
<td>25.05%</td>
</tr>
<tr>
<td>Candidate 3</td>
<td>Estimated Lifetime Benefit</td>
<td>$17,890.00</td>
</tr>
<tr>
<td></td>
<td>Estimated Lifetime Costs</td>
<td>$125,000.00</td>
</tr>
<tr>
<td></td>
<td>ROI over Lifetime</td>
<td>14.31%</td>
</tr>
<tr>
<td></td>
<td>Annual ROI</td>
<td>1.43%</td>
</tr>
</tbody>
</table>
Critical Success Factors and Risk Management
Critical Success Factors

The success of this system depends on many factors. The greatest of these is its functionality after the paper documents, the microfiche and both Student Information Systems are converted and uploaded onto DocuNECT. The purpose of this system was the streamline the retrieval of the archived student data. Unless this main purpose is achieved, the system will be a failure and will not provide benefit to cover its cost. More detailed critical success factors are:

- 100% conversion rate for all archived data
- queryable student information
- high quality scans
- readily printable data
- interface that is userfriendly
- back end database that is secure and up to date
- frequent backups of system, stored off-site

Proper training must be provided for all users of the new system, to ensure the system is running as it is intended to. Also, all the original data prior to digital conversion must also be made available while users are being trained on the new system and a during a short time afterwards.
Risk Management

As described above, the most critical factor of the system is functionality. Therefore, the greatest risk to our system is the lack of functionality, or difficulty doing so. In order to ensure proper functionality we must stress this to all proposing a solution. We must ensure that we do not accept any proposals that do not stress this themselves. We should also request a trial period with the proposed interface before agreeing on any proposal.

The implementation of any new system always carries certain risk factors. The greatest risk, perhaps, is that the system will not meet its critical job functions. Because of this, there should be rigorous testing during the development phase to ensure all the goals set forth by the stakeholders are met. This will ensure that the system runs exactly as intended. Another common risk in all systems is the security of all facets of the system. Strict administrative controls, passwords, firewalls, and other controls should be implemented to ensure only the proper individuals are allowed access to the data.

Data conversion is also another risk. The conversion from physical documents to digital information can cause data loss. Therefore, all precautions must be taken to ensure a 100% conversion rate. All students must be accounted for. All data integrity should be maintained. Anything less that 100% here is not acceptable.

New business practices carry a risk with users being hesitant or unable to use the new system. Therefore, proper measures should be taken in providing both an easy to use interface as well as proper training to all users. Further, while users are becoming accustomed to the new system, the old procedures should still be an option for them in case of the inevitable issues.
that arise with all new systems. Only when the new system is found to be reliable and users have grown accustomed to using it, should the old paper, microfiche and Student Information Systems be moved to a secure storage facility off-site.
Proposed Solution
**Proposed Solution**

From the data analysis featured in the report in the preceding pages, it is without doubt that Portford’s DocuNECT is our proposed preferred solution. The solution Portford provides allows for easy document scanning with little to no effort by GUSD staff. Portford staff then indexes records based on the criteria given to them by GUSD. The DocuNECT server side software allows these indexed records to be easily accessed, printed, managed, and even appended. The system can support any number of users, but has been quoted to us with 5 users in mind. The price per regular user is 20 dollars per month, and 50 dollars per admin user (who is able to delete and manage documents more thoroughly). Even with the monthly reoccurring costs, Portford’s DocuNECT system scored above all other candidate solutions. Below is a recap of Portford’s offerings and the DocuNECT software.

<table>
<thead>
<tr>
<th>Portford : DocuNECT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Solution:</strong></td>
</tr>
<tr>
<td>Indexed:</td>
</tr>
<tr>
<td>Data Security:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Client-Side Application Software Required:</td>
</tr>
<tr>
<td><strong>Costs:</strong></td>
</tr>
<tr>
<td>Setup and Paper Record Scanning Cost</td>
</tr>
<tr>
<td>Monthly Costs</td>
</tr>
</tbody>
</table>
Graphical User Interface
GUI

Because the DocuNECT software is hosted on the internet, it can be accessed from any computer with a web browser; however, the ability to view records is only available for computers running the Internet Explorer web browser. The following are screenshots from the demo hosted environment, using a demo list of documents, running on a demo database of indices and records, but they are a representation of what is to be expected by the final version.

Login Screen

This is the initial login screen presented to those who visit the DocuNECT service web page, this is the screen that users of the software (the clerks at Student Support Services) will be seeing. If their username is added to the access list, and they have the proper authentication information, they will be able to access the digital archive.
Once the user has logged in, they are sent directly to the “Document Retrieval” page, or tab, by default. On this page, the user is able to select the index fields to use to search for documents within the student archive. In this example “Last Name” is checked, and the field for typing in the index value to search has appeared. After entering the index information, the user must then click on search, to query the database of records.
Once the search button is pressed, the software queries the database for records matching the selected indices used for the search. In the above example, 1 record has been found. By double-clicking on the line where the record is displayed, the record viewer is launched.

NOTE: the record viewer requires Sun’s Java software to be installed in order to run properly and show you the pages correctly.
Records are shown grouped by their respective indexes. In this case, all three of the pages above are indexed under the name Marcus Johnson with the same date of birth, so the software groups them together as belonging to one person. In the final version of the software, information regarding student ID, graduation date, and graduation school will also be used to determine coinciding records. On this page, records can be viewed, deleted, downloaded, printed, emailed, linked, commented on, and there is even the option to view a detailed history of what has been done with this record in the past, and by whom – such as printing, commenting, etc.
Document Uploading

Upload Documents Page

The Upload Documents page or tab allows users to upload a new set of student records to the database, and index it. Above is the first page that is displayed when clicking on this tab, you can see that it is a very simple interface and makes it easy for users to figure out how to upload documents (Just click on the “upload” button next to the correct database of records, in this case the database of records are known as “Student Records”)
New Uploads

After a user clicks on the “upload” link next to the proper database of records, the “New Upload” page is displayed, where the user can click “Add Documents” to be forwarded to the “Add Documents” page, which provides an easy list of input fields that a user can use to browse local files and select the newly scanned documents.
The next screen, displayed above, shows a list of the documents that were uploaded by the user, and allows the user to remove ones that were uploaded accidently, or ones that the user just does not wish to upload at this time. The user also has the ability to add more documents to the list to index together.
Manual Indexing

On this page, the user is shown the documents that were uploaded on the right hand panel, using the Java applet to show the newly uploaded documents. On the left hand panel, the indexing fields that the user is required to enter are shown and must be entered in order to properly archive the record. In this example, we have uploaded Marcus Johnson’s student record, which consist of 3 pages of files, and are indexing it under Marcus Johnson with the date of birth 11/12/78 as shown in the left hand panel above. This easy to use interface makes sure that anyone can use the software easily and with little or no training.
Completion of Upload

Once the indexing fields are entered, and the “finish” button is clicked, the software proceeds to commit the transaction and finalizes the indexing and uploading process. This makes sure that should any errors occur, the clerk is made aware immediately after the files are uploaded, so that they may proceed to look for a solution – instead of finding out years later, when the record is to be retrieved.
Account Features

As with any software, DocuNECT allows the user to change various aspects of their account. In this demo case, the only option available to us is the ability to change our password. At the top right of any screen or page, there is a drop down menu next to the “logout” link that allows the user to change their password.

Query Features
One of the nice features that DocuNECT offers, is the ability to save queries made to the database. Should a particular type of query return values that are frequently accessed (for example: students graduating in the year 2006 might need to re-submit their English scores for universities because of new California High School Graduation Requirements), the query can be saved and named for later use. The query can also be labeled private – so that only the user can see it – or public – so that anyone logging into the system can see it.

**Hardware/Software Requirements**

No special hardware or software needs to be purchased in order to migrate to the DocuNECT solution. All computers in the Glendale Unified School District come with Java installed – software that is required to run the DocuNECT record viewer. All of the clerks in the Student Support Services department that will be accessing the information are also running PC computers, ensuring that they will have Internet Explorer installed on their computers.
Implementation Schedule
Implementation Schedule

Conversion Plan
GUSD should use a Direct Conversion Plan to implement the new student archive solution.

After users are trained on the software, and adequate testing has shown the effectiveness of the software, there is no need to keep the old method of archive retrieval. Since training will be performed on sample documents and not on the final system, this type of conversion would not pass for Parallel Conversion, and is therefore better shown as a direct conversion.
Other Recommendations

Although Portford assures us that there is a capable backup of all scanned documents, for redundancy’s sake, GUSD should request a copy of all scanned documents on a physical media. The scanned documents, or the database holding all of the information (including the indexed values) could be dumped onto either removable media (a flash drive or dvds) or a hard drive for a third backup. The physical media could be stored at the GUSD vault, to further protect the data from natural disaster.

Because of the nature and complexity of the information that GUSD processes, and the fact that archived student information is rarely accessed, it is likely that when the time comes to use the system, it will be difficult to find out how to access and use the system. We recommend complete documentation of the existence of the new system for retrieving archived documents (including training to all those that will need to access such information), as well as documentation regarding how to properly use the new system. When the time comes to use the system, proper documentation can save the district many labor hours, hours that would have been used to find out where the system is, how to access the system, and how to use the system.