Case Study: Willowbrook School
Willowbrook School is a small private school that has retained you to assist in the development of a new information system for the school’s administrative needs.

Background
Willowbrook School is a small, private school in the Midwestern United States. For the past 20 years it has offered a curriculum for preschool through Grade 3. It also offers after-school care, usually referred to as after-care, on premises. Last year the school added a new classroom to allow the curriculum to expand to provide a Grade 4-6 program. Willowbrook is experiencing significant increases in enrollment applications for all programs from pre-school through the Grade 4-6 program. Increases in applications coupled with the expanded program and increased demand for after-school care have led to a very high workload for the administrative person on staff. The principal and teachers have stepped in where possible, but the demand is becoming too great. Willowbrook School is a non-profit, and is not in a position to hire another full-time administrative position, which is what the principal and administrator think would be needed to handle the increased workload.

You are an independent IT consultant, specializing in developing IT solutions for small business needs. You have been contacted by the parent of one of the students to speak to the school principal, administrator and teaching staff about the possibility of setting up an information system to handle some of the school’s administrative and financial tasks. While there is not money in the budget to add a full-time position, the school does have a very active board of directors and parent committees that are experienced and enthusiastic about fund-raising for projects that do not fit into the budget. It is the hope of the school that it might be feasible to use a combination of grants and fund-raising to cover the initial cost of purchasing and setting up and information system, and the ongoing cost of a part-time support position for the system.

The paid staff of the school is as follows:

Kathy Gilliard is the principal of Willowbrook. She has been at the school for 9 years, and is a certified teacher. Kathy handles the academic and curricular issues that arise, and ensures that the school meets all federal and state educational standards. She also deals with issues related to the school’s non-profit status. Kathy and the teachers who report to her make decisions jointly about admissions and assignments to classrooms. Kathy handles payroll for teachers and teacher aides. Kathy also substitutes in any of the school classrooms when a teacher is out.
Susan Brown is the vice-principal. She is responsible for the after-care program. She has traditionally handled or been responsible for all administrative tasks related to tuition and after-care fees. Susan sends out monthly bills for tuition and after-care, records payments and handles bank deposits. While students must be pre-registered for after-care required on a daily basis, the school does offer “drop-in” care on an “as space allows” basis. Susan handles all requests for drop-in care in consultation with the after-care teachers, and adjusts monthly bills accordingly. She also maintains the school calendar, prepares handouts and reminders for parents, and administers the “camps” that run during the two weeks that the school is not in session during the spring, and the summer programs that run through July and August. She maintains all student records, and ensures that contact and pick-up lists for all classrooms and after-care programs are up-to-date. She also handles payroll for the after-care teachers and part-time assistants in the after-care programs. Currently Susan handles all her responsibilities using Microsoft Word and Excel. She is comfortable with the applications, but finds that maintaining records and producing reports, payroll, etc. results in a lot of duplication of effort, as she has to copy a lot of information from one worksheet or document to another.

There are six full-time teachers at Willowbrook, three for the pre-school-Kindergarten program, two for the Grades 1-3 program, and one for the Grades 4-6 program. There are five teacher aides, for the pre-school-Kindergarten and the Grades 1-3 programs. Teacher’s aides report to their respective teachers. Enrollment in the 4-6 program does not warrant the hiring of a teacher’s aide at this point in time, but it is expected that an aide will be hired next year, when all three grades of the program will be populated. Each teacher is responsible for keeping attendance records and recording them in the student files.

There are two full-time after-care teachers, one for the pre-school-Kindergarten group, and one for the primary grades. After-care teachers report to Susan Brown. Each after-care teacher has part-time assistants assigned to the program. Assistants report to the after-care teacher. The number of students pre-registered in the after-care program determines the number of assistants. The after-care teachers are responsible for keeping time sheets for their part-time assistants and submitting them every two weeks to Susan Brown. In addition, the after-care teachers are responsible for submitting weekly summary sheets to Susan Brown detailing any hours above those pre-registered for that students spent in the after-care program, so that parents are billed for the additional time.

Like many other non-profit schools, Willowbrook relies on volunteer time from parents to accomplish many of the tasks essential to the running of the school. A financial committee examines monthly financial reports, a fund-raising committee evaluates possible fund-raising projects and handles approved fund-raising. In addition, individual parents step in as needed to do rote office tasks such as copying and distributing handouts, to free up Susan Brown for other tasks. Parents also fill in as assistants in the after-care programs when needed, and qualified parents step into the classroom as teacher’s aides whenever possible to reduce the reliance on substitute teachers.
Willowbrook School

Paid Staff

Kathy Gilliard Principle

Susan Brown Vice-Principal
  2 after-care teachers
  1 Pre K teacher
  1 Primary Grade teacher

Assistance

6 classroom teachers
  1 Pre K teacher

5 Teacher aides

Volunteers

Financial Committee

Fund Raising Committee

Parent Volunteers

3 pre-school teachers
  1 grades 4-6 teachers

2 grades 1-3 teachers
  3 pre-school teacher-aides

1 may be hired next year Grade 4-6
2) A business process is described as specific events, tasks in desired results. One business process that Willowbrook School performs is payroll which is usually completed by Kathy Gilliard. Willowbrook schools also perform student registration. Depending on where the student is registering will depend on who completes this task. Another business process that is performed is client billing which is completed by Susan Brown.

3) Willowbrook could use a transaction processing system which is used to process data generated by day-to-day business operations. Willowbrook would benefit by using an accounts receivable system. This will help them keep track of the clients that have paid their bills as well as those who have not. Willowbrook could set this up to automatically bill clients thus relieving some stress off of Susan Brown.

Willowbrook could also use a user productivity system. This type of system provides employees of all levels a wide array of tools to improve job performance. The school would greatly benefit from a calendar that could be shared and seen by many. This calendar would be useful for scheduling purposes as well as school activities. If they had all clients give them notice in advance whether their child would be there they could post the child / staff ratios and know when they may need extra assistance.

Another system Willowbrook would benefit from is business support. This system provides job related information support to users at all levels of the company. Willowbrook could use the system in conjunction with the TP system. This system would highlight the clients with past due balances so the staff know who hasn't paid and may need a new bill or cancellation of services. All of the suggestions above would help relieve some of the demands on the principal and vice principal.

4) The biggest con I see having worked in child care myself is client confidentiality. Allowing volunteers to process applications and financial records of students and their parents is highly unethical. Volunteers should not have access to client’s personal information.

A pro could be the use of volunteers and how much those volunteers save Willowbrook money from having to hire more staff members to meet their needs. By having volunteers help with office productivity and childcare helps Willowbrook from having to hiring more office staff as well as another staff member for childcare. In turn this alleviates time from Kathy and Susan from having to do more payroll and time cards.
Systems Request Evaluation

Introduction
The Willowbrook School has made a request for a new information system that will help to reduce the amount of workload redundancy that could lead to an increase in errors, reduce the workload on the staff members, as well as increase the productivity of those staff members. Willowbrook is in need of a new system to assist them with their growing enrollments, tuition, after-care billing, and payments.

This project qualifies as a discretionary project. Government laws and regulations did not mandate the project that the Willowbrook School is proposing. However, it is evident that the school is in need of a new system based on the business case. Below is the evaluation of the system request as well as the preliminary investigative report, which outlines the request summary, findings, recommendations as well as the time and cost estimates and the benefits of the new system.

SWOT Analysis
Sad Technology Consulting and Development along with management from Willowbrook have created a SWOT analysis. This analysis includes Willowbrook’s strengths, weaknesses, opportunities, and threats.

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<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threats</th>
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<td>Decrease the amount of time staff member have to spend on administrative tasks</td>
<td>Non-essential staff having access to confidential records</td>
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<td>Staff members are onboard with the new system</td>
<td>Too many individuals having access to the administrative task.</td>
<td>The ability to train new staff members on the system</td>
<td>Volunteers having access to confidential records</td>
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<td>All members are acquainted with computers</td>
<td>Funding provided by fundraising tactics</td>
<td>Increase fundraising capabilities</td>
<td>Government regulations that Willowbrook has to follow</td>
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<tr>
<td>The enrollment is relatively low for a faster transition to a new system</td>
<td>The amount of time the staff has to spend on the administrative tasks using word and excel</td>
<td>Ability to increase enrollment</td>
<td>Volunteers and non-essential staff security issue</td>
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<td>Documentation needs updated</td>
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<td>State regulations that Willowbrook has to follow.</td>
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<td>Financial constraints</td>
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Mission Statement
Willowbrook School does not presently have a mission statement. A mission statement reflects the purpose, mission, and values of the organization. It also focuses on the challenges and goals on a long-term basis. Mission statements are important to Willowbrook’s stakeholders, as well as their commitment to their customers and staff. A mission statement that Willowbrook could adapt would be:

The mission of the faculty, staff, parents, and community of Willowbrook School is to provide a safe and caring environment for every child to develop personal growth; our curriculum design will deliver the best possible education to our students.

Goals and Objectives
Once Willowbrook develops their mission statement, they should identify short-term goals and objectives. These goals could range from one-year, three-year, and five-year goals. Some goals that Willowbrook could enact are, increase enrollment by 20% in the first year, 30% by the third year, and 50% by the fifth year. They could also set goals for creating a website that will aide them in fundraising, offer childcare training for their staff, as well as setting quarterly objectives with monthly milestones. Lastly, the objectives translate into day-to-day business operations supported by IT and other corporate resources. The outcome is a set of business results that affect the stakeholders.

Strategy
Willowbrook strategy includes the ability to increase their student enrollment without hiring any additional staff, since their current budget does not provide for more positions. On the other hand, Willowbrook does not have the funds available for this project either. However, they do believe they can raise the funds needed by grants and fundraising tactics.

Project Priority
Willowbrook has determined that a new system is a top priority as they are experiencing an increase in enrollment and do not have the funds available to hire office staff. The new system will track enrollments, tuition, after care billing, as well as payments. They would also like to submit other project requests later.

Feasibility study
A feasibility study is an analysis and a valuation of proposed project to determine if it is technically feasible, is feasible within the estimated costs, and is profitable. Recommendations made for a course of action based on operational, technical, economic, and time factors.

Willowbrook should conduct a feasibility study on their current system, as well as the proposed system. This study will help to determine the best course of action for the schools operation by including data from each of the four categories previously listed as well as the advantages and disadvantages of both systems.
Operational feasibility

Operational feasibility means that an assessment focuses on the degree to which the proposed development project fits in with the existing business environment and objectives. The system needs to be effective once it is developed. If users have difficulty with the new system, it will not produce the expected benefits. Below are the findings for the operational feasibility study.

All management and staff support the new system due to the current system no longer meeting the needs of the school. By implementing the new system, Willowbrook will be able to increase enrollment without the need to hire staff. The staff will need training on the new system. Training will be minimal since the staff is acquainted with the system. The new system will also assist in the elimination of data redundancy, thus reducing errors. This system will also eliminate the need to produce bills and receipts manually. The system will be able to free up time, allowing management to spend that time on other tasks.

Technical feasibility

Technical feasibility focuses on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. It evaluates hardware and software, and evaluates how it will meet the needs of the proposed system. The findings from the technical feasibility are below.

Willowbrook, along with SAD Technology Consulting and Development, have yet to determine Willowbrook's networking needs. By supplying specifications for the current hardware and software system, we will have a full technical feasibility. The technical feasibility is complete when supplied information and the current system are analyzed.

Economic feasibility

Economic feasibility's purpose is to determine the positive economic benefits to the organization that the proposed system will provide. It includes quantifications and identification of all the benefits expected. The projected benefits of the proposed system outweigh the estimated costs or the "total cost of ownership" (TOC), which includes ongoing maintenance and support costs, and acquisition costs. Below are the findings for the economic feasibility study.

Willowbrook believes that through fundraising tactics they cannot acquire the needed funds to support the new system, as well as the extras the system will require. The extras of this new system are the costs of training, licenses and fees, consulting expenses, as well as any ongoing expenses the system will require.

There are several options to look at when considering a new system. One option is to build a custom database system. Building a custom system may prove to be more expensive than that of a prebuilt system. A prebuilt system is another option for Willowbrook to consider. It is important to consider a software vendor that has nonprofit organization experience. One option not to consider is keeping the current system. Keeping the current system requires hiring more staff, and management would lose time on redundancy work.
Due to the technical feasibility study being incomplete, we are unable to determine a cost estimate, leaving this study incomplete.

Scheduled feasibility
Scheduled feasibility is the measure of how reasonable the project time table is by estimating how long the system will take to develop and if it can be completed in a given time period. When assessing schedule feasibility, we will consider the interaction between time and cost. Scheduled feasibility analysis is as follows:

Upon receipt of Willowbrook’s timetable for the project, we will submit a complete schedule. SAD Technology Consulting and Development can develop a preliminary timetable using programs such as Microsoft Project or Wrike. With a completed study, we will select a project team.
Preliminary Investigative Report

Subject: New Information System at Willowbrook Schools
Date: February 14, 2015

Introduction
Willowbrook School contracted SAD Technology Consulting and Development to assist in a preliminary investigation into a new information system.

System request summary
Willowbrook School has submitted a request for a new information system for their administrative purposes. The new system should be able to track after care billing and payments as well as tuition tracking. Willowbrook conducted interviews at the school and everyone agrees they need a new system.

There are problems that need addressed with the current system at Willowbrook. The problems include redundant data entries due to too many people completing the work, which cause errors and the increase in enrollment has caused excess work.

Currently the work is being completed using Word documents and Excel spreadsheets. Then staff members must manually print bills, receipts, and other information. Later, the staff at Willowbrook would like to integrate other administrative functions.

Preliminary investigation findings
While interviewing key staff at Willowbrook, it is determined there is a need for a new information system and everyone agrees. At this time, the project will include the purchase of an application designed to handle the financial aspects of the school. The system will need to be customizable and training will be required. After installation of the program on key computers, it will have the option of networking sometime in the future. Listed below are the issues to address:

- Development of a timetable- SAD Technology Consulting and Development along with Willowbrook will be collaborating on this.
- Information on the current system - SAD Technology Consulting and Development will review and make recommendations.
- Complete time and cost estimates on the current system - Susan Brown will complete this assessment.
- Obtain quotes from software vendors - SAD Technology Consulting and Development is working on obtaining these quotes.
- Identify staff to train – Willowbrook will review their staff and provide a list of names for training.

Recommendations
Due to the initial investigation, SAD Technology Consulting and Development recommends that Willowbrook use a prepackaged software from a list of predetermined vendors. Prepackaged
software will be less expensive than building a database and these vendors have experience with nonprofit organizations. SAD Technology Consulting and Development may make other recommendations based on completed feasibility studies. The vendors from which to choose from include Trailblazer, Neon CRM, Salsa, Abila, and Accufund.

**Time and cost estimates**
We will deliver a time and cost estimate when the preliminary information investigation is complete.

**Benefits**
Below is a list of intangible benefits, as tangible benefits cannot be determined at this point.

- Create customizable reports within the system and eliminate the need to export data to external spreadsheets.
- Monitor accounts for more efficient tracking and reporting and reviewing costs.
- The ability to review individual transactions, line by line, within a balance for more efficient cost analysis.
- Complete documents within the system and eliminate the need for importing Word documents.
Functional Decomposition Diagram (FDD)

An FDD is a top-down representation of a function or process. Using an FDD an analyst can show business functions and break them down into lower-level functions and processes. The FDD below shows the breakdown of Willowbrook’s billing and payments. Billing and payments get broken down into tuition and aftercare. Each of those categories then get broken down into their fees (fixed and/or variable). The fees are broken down further into payment options. From there one can see the payment options that are offered by the company. These options depend on the service the student are registered. If the student is involved in drop-in, care the breakdown then details the specific time blocks that are being offered by Willowbrook.
Willowbrook FDD

Billing & Payments

Tuition

Fixed Fee

Payment Options

Lump Sum 5% discount
10 monthly Payments

After care

Fixed Fee

Payment Options

Lump Sum 5% discount
10 monthly Payments

Variable Fee

Payment Options

Lump Sum 5% discount
10 monthly Payments

Pre Registered Students

Preschool

12:00 – 1:30

12:00 – 3:30

12:00 – 5:30

Kindergarten

1:30 – 3:30

1:30 – 5:30

3:30 – 5:30

Primary

Drop - Ins

Billed Monthly

Variations for different stages of education.
Data Flow Diagram

Context Diagram

A context diagram shows the entire information system as if it were a single process. The context diagram below shows Willowbrook’s process. The diagram shows how the parents receive invoices from Susan (accounting) and how they pay those invoices. The diagram also shows how Susan receives the data that allows her to process those invoices and payments. Included in the diagram are tuition and drop-ins registration information for each student and the time those students are in attendance. The diagram also provides the process to which the financial committee receives their monthly reports.
Context Diagram

Parents

Payment

Willowbrook School

Tuition &
Drop-in
times

Payment

Susan’s Excel
(accounting)

Tuition &
Drop-in
Times

Registration information

Tuition and
Drop-ins

Monthly Reports

Financial Committee
Data Flow Diagram Level 0

A DFD level 0 provides a logical model that shows what the system does. The following DFD level 0 is a model of Willowbrook’s parent, student and financial system. This diagram further details how the parents receive invoices, make payments, and receives receipts for those payments. The DFD shows how Susan receives the information she needs in order to process those invoices and payments. The diagram gives in depth detail as to how every attendance, bills, and payments travel along within Willowbrook.
Data Flow Diagram Level 1

Level 1 DFD’s aims to give an overview of the full system. They look at the system in more detail, and the major processes are broken down. The following DFD level 1 is an example of a single major process involved in Willowbrook’s system. This DFD 1 is a breakdown of how a student is enrolled at Willowbrook School. The diagram details how each student’s information travels through the system from the very start of the registration process through his or her enrollment confirmation.
DFD 1 for the Student

1. Student
   - Reg Form
     - Confirm Letter

   1.1 Availability
     - Results of Enrollment
     - Available Openings
     - Registration

   1.2 Register Student
     - Available Tuition Info

   1.3 Registration Confirmation
     - Available Drop-ins Info

1.4 Program
   - Student Enroll Info
   - Tuition & Drop-in Openings

1.4.1 Tuition
1.4.2 Drop-Ins

Willowbrook
Willowbrook ERD

The ERD shows the process that the company goes through when they receive a new student. The student gets enrolled, once enrolled they move to the type of program they will need. The program will be either aftercare or an academic program. Once the students receive services, that data goes to creating bills. Once the bills are created, they get past to the parents. The parents make payments, which goes to the accounting system. After the accounting system receives those payments, reports are generated for the financial committee.
Brandy Spaid

Willowbrook ERD

STUDENT → ENROLLED IN → AFTERCARE & ACADEMIC PROGRAMS

PAYMENTS → PARENTS → CREATE BILLS

ACCOUNTING → REPORTS → FINANCE COMMITTEE
Brandy Spaid
Willowbrook School
Database/ERD

Student
- PK: student_
- s_f_name
- s_l_name
- fixed_fee
- household_
- p_l_name
- p_f_name

Block Number
- PK: block_id
- student_year
- student_

Student Attendance
- PK: attendance
- FK1: block_id
- FK2: student_

Monthly Bill
- PK: bill_date
- amount_paid
- pay_date

Parent
- PK: p_f_name
- p_l_name
- household_
- p_address
- p_phone_1
- p_phone_2
- state_id
- zip_
- city_name
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<tr>
<td>555-555-1111</td>
<td>555-555-1112</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Prototype 1

Prototype 1 will allow for both parents and staff to login to Willowbrook School. The parents can login using a username, password, and student number. The staff must login using a username and password. Once the parent is logged in, they will be directed to another page where they can select from three options: Student Information, Bill, and log out. When a parent clicks the student information, they can view and change the student’s address and phone number. This change will automatically change within the entire Willowbrook system. A parent may also view and pay their pay via credit card by clicking “Bill”. Once they pay, the parents have to option to print a receipt. Again, this is sent to Willowbrook.

Should a staff member login using their username and password, depending on their role within the company will depend on what they can view. Should an essential employee login they will be able to view all information pertaining to each student. A staff member has the option of searching for a student using a drop down menu that contains all students or they can chose from another drop down menu that will allow them to pick a search term (student name or student number) and type that information into a search box. Another drop down menu will appear, this drop down contains student information, attendance, and bills for which the staff can chose to view. If a non-essential employee should login, they can view only essential student information such as address, phone number and parent names. These employees can also see a student attendance and mark when a student was present and the times for which the student attended. All data is sent to Willowbrook.
The mission of the faculty, staff, parents, and community of Willowbrook School is to provide a safe and caring environment for every child to develop personal growth; our curriculum design will deliver the best possible education to our students.
Parent Portal

Student Information

Welcome to Willowbrook School

Bills

Log Out
# Parent Portal

## Student Information

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Name</strong></td>
<td>Kelly Starr</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>1245 Main Street</td>
</tr>
<tr>
<td><strong>City, State, Zip</strong></td>
<td>Willowbrook, Pa 17844</td>
</tr>
<tr>
<td><strong>Phone Number 1</strong></td>
<td>555-555-1223</td>
</tr>
<tr>
<td><strong>Phone Number 2</strong></td>
<td>555-555-1224</td>
</tr>
</tbody>
</table>

- **Log Out**
- **Submit Changes**
Amount Due: $350.00
Due Date: 4/1/15

Amount Paid: $250.00
Date Paid: 3/1/15

Pay Bill

Pay Now: Amount: $350.00

Card Holder Name: John Doe

Card Number: 1234-5678-9101-1121

Expiration date: 1/1/17

3 Digit Code: 135
Prototype 2

Prototype 2 will allow only staff to login. The interface for prototype 2 is identical to that of prototype 1 in regards to the staff.
Willowbrook School

User Name: [blank]

Password: [blank]

Staff Login

The mission of the faculty, staff, parents, and community of Willowbrook School is to provide a safe and caring environment for every child to develop personal growth; our curriculum design will deliver the best possible education to our students.
Staff Portal

Issac Richmond

Attendance

Parents

Student Name

Address

Phone Number

Log Out

Susan Richmond

8692 Queen Street
Willowbrook, Pa 17844

555-555-1112

Student Number

105-5
Usability

Both of my prototypes were designed with usability in mind. The system is all connected, so if anyone makes any changes those changes will be system wide. I did not use any language that could be misconstrued. I kept the scheme simple and used colors and fonts that are easy to read so that anyone with a disability should be able to use the site. I feel that I have met every aspect of the usability guidelines to the best of my ability.
Application Testing
Willowbrook is starting over with a new system; they are not keeping anything from their old system except for their hardware. The staff that will be present for the testing will be any staff that will be using the new system and the quality assurance team. Unit testing will be completed first. During this testing phase, the team will run through scenarios to identify any errors. Once the errors have been corrected, an integration test will be completed. During this testing phase, the phases that make up the system will be tested individually. The two phases of this system will be the fixed billing phase and the aftercare phase. Once each phase has been tested separately, the phases will be integrated and tested together. When the integrated system is functional, the new system will be tested using Willowbrook’s current system such as their operating system, network, and computers. This test is done to check the compatibility of the system. Finally, the system is tested using similar data to that of which Willowbrook will be using. When the system has completed and passed all the necessary testing, the staff training can be started. Once the staff have been trained, another testing phase can be completed by the staff to ensure they understand the system and its functions.

Changeover Methods
Willowbrook has requested a direct cutover method that is timed around their academic year. The schedule that Willowbrook uses for billing is as follows; the fixed fee billing is completed in April and begins again in July. The drop-in After-Care billing does not end until the 2nd week in June. This time frame would only allow the system to be installed and functional within a month and a half. Willowbrook could use the direct cutover method for the system. However, there may be significant issues with the system due to this method and the time allotted to complete the changeover would not be a significant amount to test and correct these potential issues. I would not recommend that Willowbrook use a direct cutover for this new system due to the risks involved. I would recommend that Willowbrook use a phased operation. The phased operation would allow the system to be installed in phases that would allow more time to test the system and correct any issues that may arise. The first phase would include the fixed fee billing. The phase would start in April after the last fixed fee bill was completed. This phasing would allow the system to be installed and tested for approx. 1 ½ months before the drop-in After-Care billing would be completed. Once the aftercare billing is complete, that phase of the system could be installed and tested. This time frame would allow 1 ½ months to have the aftercare billing installed, functional, and then allow the entire system to be tested in its entirety.

Documentation
For the prototype, all users will receive a booklet that shows the user how the new system works. The booklet will also include a troubleshooting section so that the user can try to troubleshoot the problem before calling support. Below is a sample of what the booklet would look like.
The screen above is the main screen; here is where the staff and parents login to access their accounts. The section highlighted is where the staff sign in to access their account. The staff member enters their username and password that was given to them by the administrator. Once they enter their credentials, they need to click staff login.

The highlighted portion is for the parents to login. The parents need to obtain their login from the administrator. Once they enter their login information, they would click parent login to access their account.

Parent Portal

The following screenshots are of the parent portal. These screens are discussed so the staff can help parents access their accounts. The staff can also make copies to give to the parents when the new system is functional.
This screen is the parent portal screen. Here is where the parents can click to view their bill, student information and log out of the system. The student information button will take the parents to a screen where they can view and update their child’s address and phone numbers as shown below.

This screen was described previously; the parents can make any necessary changes and submit those changes by clicking the “Submit changes” button. Once the parents are done with the changes and have submitted them, they can log out or use the browser's back button to go back to the previous screen.
If the parents want to view the bill, they can click the “Bills” button and be directed to the screen that displays the bill. The bill screen is shown below.

This screen is for the parents to pay their bill. They can see the amount due, the amount paid and make payments from this screen.

Click “Submit Payment” to submit their credit card information to pay the bill.

The parents can add their credit card information in this section.

The parents can print a receipt after they make a payment.

This screen is for the parents to pay their bill. They can see the amount due, the amount paid and make payments from this screen.
Staff Portal

The following screenshots are for the staff. These screenshots will assist the staff in the use and navigation of their accounts.

Above is the main screen; here is where the staff login to access their accounts. The section highlighted is where the staff sign in to access their account. The staff member enters their username and password that was given to them by the administrator. Once they enter their credentials, they need to click staff login.

This shot shows the drop down menu that a staff member can use to select a student that they would like to view.
In the screen above, highlights a search bar. To use the search bar, the staff member must first select the search criteria from the dropdown menu (student’s name, ID, etc.). They staff would then use the search bar by typing the information and clicking enter on the keyboard.

Once the staff has selected a student, they can choose what information they would like to view using this drop-down menu. This list will give that staff the option to view they student’s information such as parents and contact information, the student’s attendance, and the student’s bill. The information that they chose to display will show to the right of the menu.
Prototype 2
The second prototype is identical to the first except that it does not contain the parent portal. The booklet would contain all of the same documentation as in the first, except that of the parent portal. The following screenshots are for the staff. These screenshots will assist the staff in the use and navigation of their accounts.

This shot shows the drop down menu that a staff member can use to select a student that they would like to view.

In this screen, the staff can also use a search bar. To use the search bar, the staff member must first select the search criteria from the dropdown menu (student’s name, ID, etc.). They staff would then use the search bar by typing the information and clicking enter on the keyboard.
Once the staff has selected a student, they can choose what information they would like to view using this drop-down menu. This menu will give that staff the option to view the student’s information such as parents and contact information, the student’s attendance, and the student’s bill. The information that they chose to display will show to the right of the menu.

**Data Conversion**

Willowbrook’s Excel data can be exported into the new system. All data from Willowbrook’s current system should be exported into the new system. The student information is the most important data that needs to be entered and the most time-critical. Once the student data is entered, the monthly billing should be entered. The data that should be entered next in order are the parent data, block information and lastly student attendance. Below is a chart that displays the individual sections that were previously listed and how the data should be entered from each category starting with the most important.

<table>
<thead>
<tr>
<th>Data Entry order</th>
<th>Categories</th>
<th>Student Information</th>
<th>Billing</th>
<th>Parent Information</th>
<th>Block Information</th>
<th>Attendance Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Student name</td>
<td>fees</td>
<td>name</td>
<td>Block ID</td>
<td>Student information</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Student number</td>
<td>Pay dates</td>
<td>Household #</td>
<td>year</td>
<td>Block ID</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Fixed fee</td>
<td>Student Information</td>
<td>Student Information</td>
<td>Student number</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Household number</td>
<td>Bill dates</td>
<td>Contact information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Parent Information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Contact information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pre-Installation Tasks

The new system will require staff training. The staff that will need training will be any staff working with the new system. The training will be done on site and in small groups. Smaller groups will allow for a more one on one type of training. Willowbrook’s staff can be broken down into three categories, essential staff (Cathy and Susan), teachers, and volunteers.

Essential staff will be trained on the entire system. Having Susan and Kathy trained on the entire system will allow the other staff to seek assistance from them before calling for support. Some topics that may be covered are requesting enhancements, user training, and major reports.

The second group or teachers will require training on topics such as startup and shutdown, major system functions, troubleshooting and menus. Should Willowbrook decide to continue their use of volunteers, each volunteer should be trained on their specific volunteer work. For example, Willowbrook has volunteers that assist them with their fundraising. These volunteers should be trained on the fundraising aspects of the system. The volunteer should be trained by Kathy and Susan.

Post-Installation Tasks

Maintenance

Willowbrook will have to do some maintenance to their new system. They may need to do some general updating to the system, and they may find the need to replace cables, as well as error corrections. These types of maintenance issues would fall under the corrective maintenance category. Corrective maintenance diagnoses and correct errors in an operational system.

Willowbrook may also need to do adaptive maintenance. Adaptive maintenance adds enhancements to a system and makes it easier to use. Some adoptive maintenance that Willowbrook may need could include introducing a web page or adding mobile devices for the teachers to use. Teachers could use these when taking note of a child’s arrival or departure for afterschool care or to keep an accurate headcount of their students.

Willowbrook may also need perfective maintenance. Perfective maintenance involves changing a system to make it more reliable, effective, and maintainable. Willowbrook may find this necessary when their system starts to slow down or when they need to make an upgrade to their current system. Willowbrook’s files may also need to be compressed to free up much-needed space. They may also need perfective maintenance due to the rapidly changing laws they must follow. Perfective maintenance will allow them to make these changes.

Willowbrook will also need preventive maintenance. They will need their files backed up in case of a power or hardware failure. They will also need antivirus software to help secure their important documents from security breaches or viruses. Preventive maintenance is to avoid problems and can result in increased user satisfaction, decreased downtime and reduced TCO.
Support

Should Willowbrook require support for issues they cannot solve on their own they will have a support plan in place. The support plan will have multiple levels. The reason for multiple levels is to provide better support and faster turnaround. Level 1 support will be a call-in helpdesk. Level 1 will work with the customer to determine the issue and help the customer fix the issue. In the event that level one cannot fix this issue, the problem will be moved to a level two. Level 2 support is a specialist of the system. Within level 2 there are three sub-levels, hardware, company software and third-party software specialists. At this level, they will determine if the issue is in any one of the previous categories. Again, the support team will try to correct the error. If the error cannot be fixed in level 2, it will move to a level 3. Level 3 support consist of software engineers. This is the top level of support any issues should be resolved at this level.