Executive Summary

Student Consultant, Jamar Parris
Community Partner, MJ Meenan, J.D.

I. Background Information

The mission statement of Sarah Heinz House is:

> *To build a strong community and help youth from pre-school to age 18 to learn personal integrity and physical and mental discipline through a wide array of programs including educational, leadership development, recreational, social, the arts and community service.*

Founded in 1901, the House is currently a member of the Boys and Girls Club of America and is located within the North Side neighborhood of Pittsburgh. Targeting those from preschool to age 19, approximately 800 students utilize the programs in arts, sports, etc at the House each year. Among the 15 full time employees, staff knowledge about technology is quite good especially in office productivity programs such as word processing and spreadsheets. Database management skills were somewhat limited however, although Microsoft Access is installed on every computer.

There were numerous issues associated with the House's management of alumni data. These ranged from a lack of standardization of data to inability to adequately mine data from the thousands of alumni records due to their paper only format. In addition, these manual cards are ageing and as such will eventually be unreadable and could have caused many years of history to be lost.

II. Consulting Tasks

The major focus for this consulting assignment was on improving their alumni data management. The approach taken was that the usage of a Microsoft Access based information system would be best given the prevalen ce of Access on the computer present, it's short learning curve and that the majority of other systems used by the house were Access based increasing the chances of interoperability.

The starting point was the generation of a list of required output reports from the system. This is essential because the output from the system generally determines what input is necessary. Once these inputs were finalized, a system design was conceptualized and implemented.

In addition, basic database staff training formed a critical part of this process as knowledge in this area was somewhat limited so increasing their capacity in this area was vital in order to ensure the sustainability of the solution.

III. Outcomes Analysis and Recommendations

The system implemented is a concurrent multiuser system and is structured as follows:

- 4 forms which serve as input to 12 tables.
- 4334 alumni records including basic credentials, awards received and classes taken.
- 8 query templates which exploit similarities in queries to enable basic changes in queries to result in different reports being generated.

In order to facilitate this, basic database management and query skills have be passed onto staff. This is important because as their needs change, these queries are adaptable by the staff members themselves without outside assistance and this increases sustainability and adaptability.

However, it should be noted that advanced database knowledge such as normalization and database design has not been passed on and as such, extensive changes to the database require the assistance of external personnel. This should not be viewed as a risk to sustainability however but as a suggestion of capacity yet to be reached. This is especially true given that there is already some knowledge present which would make learning these advanced topics somewhat easier.

Issues with standardization and consistency have been addressed by restricting input in many cases to a drop down list. This prevents users from entering invalid or misspelled information into the system. Finally, this system is seen as the starting point towards the purchase of a full-fledged donor management system which would aid the organization is keeping track of funds raised.

In addition to these outcomes, I also recommend that there be initiatives towards increasing staff training and interactions on technology decisions. By training staff in aspects such as database management and troubleshooting, it reduces the reliance on external personnel to fix problems which can lead to substantially reduced costs.

In addition, this can also lead to better staff input on technology decisions and initiatives since this knowledge can lead to a better correlation of how technology can be exploited by the organization to accomplish their mission. Robert Morris University (www.rmu.edu) has a nonprofit school that provides classes including database management ranging in price from $50 to $200. This would be an excellent resource.

In addition, there should be an initiative towards building an online alumni network targeting personnel no longer living within the Pittsburgh area and enabling alumni who may not be able to meet regular basis due to conflicting schedules to interact with each other.

This not only strengthens the alumni network but can also lead to repeat donations by alumni because they constantly interact with the organization and its members and it has been shown that online donors give significantly more than offline donors. Many sites such as Google Groups would be a great resource since they make the process very simple at little or no cost.

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About the Consultant

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Final Consulting Report

Student Consultant, Jamar Parris
Community Partner, MJ Meenan, J.D.

I. About the Organization

Organization

The mission statement of Sarah Heinz House is:

> *To build a strong community and help youth from pre-school to age 18 to learn personal integrity and physical and mental discipline through a wide array of programs including educational, leadership development, recreational, social, the arts and community service.*

The house was founded in 1901 by Howard Covode Heinz and was initially known as the Covode House until 1913 when HJ Heinz, the father of Howard Heinz commissioned the construction of a larger building and named it after his wife Sarah Sloan Young Heinz to honor her work in the community.

In 1934, the House became officially associated with the Boys & Girls Club of America. Over 100 years since its inception, the House continues to build a strong community and help youth from pre-school to 19 to learn personal integrity and physical and mental discipline through the wide array of programs. Approximately 800 students utilize the programs provided by the organization every year.

The house is governed by a board which includes prominent personnel from those in the public service such as the Allegheny County Department of Human Services and those in industry such as personnel from Citizens Bank. There is an executive committee which includes the chairman, vice chairman, treasurer and secretary. This committee is responsible for strategic and technology initiatives.

The Heinz house will be the largest single-unit Boys & Girls club in the nation in 2007 when plans to expand its programs and the completion of a new building complete.

Programs

Programs include classes in the arts, recreation, sports, community service initiatives and environmental programs. In addition, there are also classes in fine arts, piano, guitar and voice. Sporting includes soccer, basketball and gymnastics. Community service and leadership development however is the overriding theme and there is an emphasis on building environmental knowledge.

The programs run by the organization are diverse and the programs typically start at beginner level and advance all the way to the competitive level. In fact, many students have competed both statewide and regionally with great success.

Technology also plays a vital role via the inclusion of a learning center, a computer lab for general use and a robotics class and a robotics competition where students compete.

Staff

There are 15 full time employees and 25 part time employees who work at the House. Their roles are quite diverse and range from physical education teacher to public relations officer. There are also the traditional roles found in any organization such as an accountant.

I met with various staff members and there seemed to be limited knowledge about future plans especially with regards to technology initiatives. Technology decisions are typically made by the board which includes a professional from the technology industry.

The staff is quite friendly and very excited about the prospect of technology improving their work processes. The staff all seemed to possess some computer knowledge especially in regards to office productivity programs such as word processing and spreadsheets. My community partner uses computers to send out monthly newsletters and communicate with potential donors via email. One member of staff has even designed her own database to keep track of student records related to her job function.

Many of the staff seem to also have a variety of roles, for instance the physical education teacher also ensures that a backup of the data stored on the server within the facility is done.

Technical Environment

Each full time staff member has their own PC and there is a fully networked setup with a central server and shared network drives in order to enable information exchange. In addition, there is a computer lab used by students that is also part of the network. Each PC at the Heinz House has access to the internet and runs Windows XP. The computer lab was also recently upgraded through the donation of additional computers. Most computers seemed to possess Pentium 4 processors and given that Windows XP is the operating system must possess a minimum of 128MB of RAM.

Microsoft Office is installed on each computer and in addition there are multiple printers available for staff and student use.

Technical Management

There is very limited internal technology management within the House. There is one internal person whom is responsible for backup. In addition there is no overall technology manager and external personnel typically deal with any technology issues faced by the organization.

Staff technical knowledge seemed limited in areas such as networking and troubleshooting which could lead to a longer than necessary time before issues are fixed. This is especially true if external personnel are required when an issue presents itself. This may be because technology is seen as more of an enabler function.

Technology Planning

The Board is responsible for all technology planning done by the organization. There is again no Technology Planner but mainly a focus on having systems to handle certain areas such as accounting, student management. There seemed to be a thought process of "How do we fix this?" instead of a more proactive approach. This poses potential problems in the future where it could be costly a fix a mistake that could have been avoided with a good technology plan.

Staff knowledge of technology plans also seemed limited with some staff knowing very few details about information systems that will be implemented within a relatively short time frame. For example, there is limited knowledge done about a new student management database system to be implemented in a few weeks.

Internal and External Communication

Due to the networked infrastructure, files can be shared easily. In addition, each staff has access to an email account which further enables information exchange. The web site for the organization was recently redone by Brian Pond, an external contractor and when compared to the previous one in place is a vast improvement in terms of layout and easy access to relevant data. The other site was quite basic and provided limited information. In addition, there is a newsletter sent out by postal mail every quarter with updates about the organization and providing alumni profiles, etc. There is also an online mailing list setup which allows persons visiting the website to sign up to receive updates via email.

Information Management

Most of the information management done by the organization is manual and involves updating information on student record cards or registration rosters. This ranged from name, address and parental information to classes taken and awards received. There seemed to be little correlation between the separate process of initial student registration which is the payment of fees and the gathering of basic information and the process of student registration for courses. As such, there seemed to be a lot of redundant data about the student stored in registration rosters that are already present in his or her personal file. This made it difficult to track what students have done without going through the entire roster of registration records looking for his or her name on each record.

As previously mentioned, there is a new system to be implemented in January 2007 called the Vision system. This system is proposed to streamline and automate many of the manual processes and enable better data correlation hence removing these issues associated with current student management.

Alumni information also seemed to be updated on an ad-hoc basis and there seemed to be no efficient way to really ensure up to date contact information about each alumni due to a lack of communication with past students. There are approximately 20,000 record cards which contain alumni information. These records date back to 1901. Given the manual record keeping and variations in shorthand, it was hard to distinguish at times what is stated on each record. This problem will be exacerbated by the age of the cards.

Business Systems

Vision is system that is used by many of the Boys and Girls Club of America organizations and the popularity of this system with other clubs was a factor in the decision to adopt this system. In

addition Vision is to provide for better student management. It is a Microsoft Access based system. Staff still has not be trained on using this system and currently the implementation timeline has to be revised.

II. Scope of Work

Task 1. Improve Alumni Data Management Function

Given the vast number of cards performing, data mining was tedious and time consuming and made it difficult to group records according to date ranges or schools attended or other useful categories. This inability to do data mining has caused problems with indentifying potentially useful sources of up to date information about alumni such as schools or even other alumni who were at the house within the same time frame.

The system in place was manual and this led to issues with updating records because it was tedious to cross out or update a manual card. In addition, over the years there was been no standardized format set up for record keeping and as such records were inconsistent and this also added to the data mining woes of the organization. Given the age of the manual cards, it was also essential that the information stored on them be moved onto an electronic format to ensure that many years of history are not lost.

There was an initiative to copy the information stored into a Microsoft Excel spreadsheet and whilst this has resulted in some of these records being stored an electronic format, many of the issues present in the paper based system described above are still prevalent such an standardization issues and an inability to group records into categories.

This overall problem had led to the organization being unable to contact alumni, potentially acquire additional funding from these alumni and build a stronger alumni network. These are important to the organization since fundraising is essential to the accomplishment of their mission and alumni who have benefitted from their programs would be likely donors.

In order to deal with these issues, an information system was proposed which stored all of the manual alumni data in a standardized format in order to ensure consistency of data. Given the fact that some of the records were already stored in a Microsoft Excel spreadsheet, I proposed that the system be Microsoft Access based database due to the relative ease of importing this data into Access from Excel. This reduced the need to reenter some of the data.

In addition, given my significant background in Microsoft Access, the fact that Access was already present on each machine within the House, and the ease of which Access can be migrated to a larger solution if deemed necessary in the future it was a logical fit.

Expected Outcomes

I aimed to perform the following:

Activity	Expected Outcome	How measure	Current Measure	Evidence of Change
Discuss information needs	Discuss required output and hence a	A list of reports that show	No list of reports exists.	Report Document

with staff.	determination of the input needed to the system.	expected output to be generated and how it relates to their mission exists.		
Analyze current data.	A determination of what information is relevant	A list of required input data	No list currently exists.	List exists. CP signoff.
Determine potential application solutions.	Potential solutions are determined.	A list of applications	No list currently exists.	Solutions document exists.
Speak with CP and determine solution.	A solution is chosen.	A plan for solution.	No solution currently chosen.	Solution plan exists. CP signoff.
Build basic database management skills.	Staff involvement in database implementation.	Staff training databases exists.	Little database knowledge exists.	Staff knowledge and hence comfort with using Microsoft Access. Sample databases.
Implement & alpha test system	A working system	Test data stored in system. Generation of reports.	No system.	All functionality implemented. Records of data stored in system.
Develop capacity to use system.	User ability to use system. User testing of system.	User enters data into system.	No usage of system.	User queries are generated. User feedback.
Make changes based on feedback.	Updated system.	Updated system exists.	No updated system exists.	CP signoff.
Build capacity to maintain system.	Enable staff to make minor changes to system as needs change or grow.	Staff can add create queries and reports.	No current support plan for new system.	Staff creates reports, etc.

Additional Impacts

Not only would this enable the creation of a new system but it would also increase the skills staff members possess. This would cause reduced reliance on outside assistance for problems and would enable a better understanding of how technology can help their organization. This will surely be useful in the technology planning process because staff will be more able to effectively

communicate their opinions to upper level personnel. This can lead to a better understanding by the executive committee on how technology can be used to aid in accomplishing their goals than previously.

III. Outcomes and Recommendations

Task 1. Improve Alumni Data Management Function

The goal of this task was to deal with the various data management problems currently being faced by the organization such as a lack of standardization and the inability to mine data effectively using the manual system previously in place as mentioned in the scope of work.

An alumni database management system is now in place. The system is based in Microsoft Access with the backend records being stored on the organization's server and the front end consisting of forms and reports which interface with these records being stored on the systems of the users. This setup enables concurrent usage of the system from multiple computers. The primary users are my community partner and her assistant, whilst secondary users are tasked mainly with data entry.

The system is composed of 12 tables, 1 primary table which contains general alumni data such as name and address information and 11 secondary tables which store other information such as awards received and schools and churches attended. Similar to the tables, input to the system is composed of 1 primary form and 4 enabler forms. This reduces the need to switch between many forms to enter data since most of the data entry is performed on one screen. The relationships existing between these tables can be seen in Appendix B and the system's primary form and other system screenshots can be seen in Appendix C.

All of the data entered into the system is currently stored in a standardized format. This differs from the previous manual system where the format of record keeping was dependent upon the shorthand of the person entering the data. When a user is entering data into the form, he or she is restricted in many cases to a drop down list. If the value is not found within the list, the user has the option to add that value to the list for this and future use. This prevents the user from entering random or misspelled values and ensures data consistency in addition to standardization.

An example of this can be seen in the case where an alumnus has received an award that has not been previously entered into the system. In this case, the award will not be in the available list since it is unprecedented. The user simply clicks the "Not in List? Add New Award" button and he or she can add this award to the system.

There are currently 8 main queries which serve as input to 8 reports. As information needs can vary on a daily basis, it is difficult to create a query for every potential question that the user may ever ask. As such, query templates have been created to solve this problem. These query templates exploit the fact that many of the queries will be of a similar structure with only the criteria needing to be changed. As such, these templates enable the staff to make minor changes to one of the eight preexisting queries in order to generate reports based on the criteria specified by them. This increases the system's adaptability to their needs.

For example, if the required input is a listing of all alumni who were present at the organization between 1958 and 1970, the user can edit a preexisting query that uses the range 1935-1948. Once the query's criteria is changed, this resulting information is also reflected in the report generated

based on this query. This enables a deeper understanding of the overall structure of the database and as such furthers their database skills. In fact, the above mentioned scenario is an example of this, as my community partner's assistant changed the criteria on the query in order to generate the 1958 to 1970 list as requested by my community partner during a session.

The staff has conceptualized various potential reports based on these queries from their analysis of what would be useful output from the system. This includes reports such as students who received a particular award within a particular year. This knowledge of how queries work enables them to adapt the system to their needs. In addition, the information has been formatted in a way that was previously unavailable or tedious in the manual system. These includes grouping of people by high schools or churches or number of awards received.

Information such as this is very useful to my partner because it enables her to create a viral effect where if she has successfully located an alumnus, she can provide him with a list of people with whom he may have had contact with during his stint at the House based on the awards he received or sports that has participated in. Given this information, this alumnus can prove to be a gateway to locating and identifying many other alumni as they may have remained in contact after leaving the House. Two such lists have already been generated and given out in order to aid in the alumni search process.

In addition, having information such as what each alumnus has done whilst at the House enables my community partner to relate more effectively to and connect on a more personal level once someone has been found. For example, if a user played Soccer whilst at the House, he or she may have fond memories of this and by reminding him or him of this, he or she may be encouraged to give more funding in addition to the building a stronger alumni network both of which impact on their mission.

The system now contains 4,334 records which are mainly the results of imported information from the Excel spreadsheets. Efforts are currently underway to enter any information that was lost during the import process in addition to entering new alumni information stored on the estimated 15,000 manual cards.

Whilst the staff is able to create, edit and remove queries, forms and reports, certain aspects of database design were not discussed in depth. These include database normalization and table modification. This was done due to the innate complexity of the database design. This means that if the type of data stored in the database needs to be changed substantially that the staff will be unable to implement these changes themselves.

This limits their increased capacity somewhat and as such can be deemed as a risk to sustainability for the continued use of the system if their needs change drastically. One example of this would be where the organization decides to use the system to track funds raised. This would require a large modification to the database design. However, given the current knowledge acquired, this issue can be addressed more quickly as the need arises via training to provide the additional skills needed and is more a suggestion of capacity yet to be reached. Even if outside help is required, the staff can now better communicate their needs to the relevant personnel due to their increased understanding.

The staff has a better understanding of how database systems can be harnessed for their organization. The database is the starting point towards a full fledged donor management system. This proposed system will streamline the process of managing funds received and this is extremely important because these funds are a critical source of support for the continuation of the programs currently provided.

The recommendations below seek to build upon these outcomes and to also promote new innovative ways to accomplish and make other tasks more efficient and effective. Whilst the primary focus is on their alumni and fund raising objectives, focus is also placed on recommendations that can have an organization wide reach. This is especially important from a technology planning perspective which is an organization wide effort and not solely based on one functional area.

The recommendations aim to create an organization ready to accept and handle technology issues and initiatives. This can reduce the impacts of potentially costly technology mistakes and lead to new innovate ways to raise funds hence furthering their ability to accomplish their mission.

The goals are as follows:
1. Improved staff training and input on decision making.
2. Strengthened alumni network using technology

These recommendations should be looked at on a reoccurring basis instead of from the strict viewpoint of a timeline. For example, staff training and input on decision making for instance needs to happen constantly to ensure that technology is being used in a manner relevant to their goals.

Recommendation 1. Improve training and input on decision making

This goal is aimed towards enabling the organization to make informed technology decisions by combining two crucial areas. Firstly, technical knowledge by all staff is important and efforts should be undertaken to engage in periodic training sessions to not only refresh but also learn new skills. These could range from basic troubleshooting, word processing and database management skills to the more advanced such as networking.

This enables the second aspect of this recommendation which is more staff input on technology decisions. Technology staff meetings should be held at least 3 times a year to encourage a proactive approach to technology, ensure that their current technology is meeting their goals and to consider new ways to use technology. It is important that staff input be garnered at the very beginning of any decision making process as it can significantly affect decisions made later in the process.

Reasoning

Technology is becoming a vital aspect of the business world, including the nonprofit sector. *"Studies have shown that online donors usually give 50% more than those who donate exclusively offline, and according to a Giving USA study, 75% of the $250 billion raised in 2004 came from individual donors."*[1]

This is just one example of how technology can be harnessed to accomplish an organization's mission via online fund raising efforts. This is also important from a cost perspective in addition to from a fund raising perspective. Increased knowledge can lead to reduced reliance on external personnel to handle tasks which can result in significant savings.

This is especially important when it comes to technology planning because, since the staff actually implement higher level goals and directives and are in constant contact with the information, they

[1] Donor Town Square Fundraising Blog, "Building Action Oriented Web-Sites", http://www.donortownsquare.com/blog/default.aspx?bpc=269T2XWJ2S&bc=HCCCKDRY4K

best understand what the organization's processes currently are and can readily identify any deficiencies present and generate ideas on how they could be improved. This contributes to the organization's mission in terms of more efficient usage of not only funds but also time which could be focused elsewhere.

Approach

Given the relatively large size of the staff and the availability of a computer lab, the best approach would be to have training staff wide sessions at points during the year where someone either internal or external to the organization provides this additional knowledge. These should be very informal and interactive sessions to encourage feedback from the staff and spark staff interest. Group training sessions can also lead to reduced costs via discounts for group sessions instead of individual sessions.

A similar informal approach should also be taken to technology staff planning meetings. Whilst it is important that these meetings happen during the year, care should also be exercised as to not have them too frequently as their value may not be clearly as clearly seen by the staff. In addition, it is important to encourage staff feedback, even when these meetings aren't scheduled.

One way to approach this is to appoint someone as the technology leader whom any ideas or problems can go to which can then be discussed in further detail. It is important that this person be someone whom staff feels comfortable discussing ideas in a very informal manner with to encourage idea generation. This could be done by having an election where the person is chosen, giving many people the opportunity to fill the role and take a lead.

Given that most of the information systems currently in place are Microsoft Access based; an excellent starting point would be ensuring that everyone within the organization who interacts with these systems on a daily basis or even sporadically be trained extensively on this platform. Additional areas of emphasis can be advanced word processing, effective communications via email and web page design skills. This is relevant given that there is increasing interaction with external parties such as donors and volunteers online using mailing lists and the website. Skills learned can range from handling mailing lists to how to generate visually stimulating emails using HTML. Staff members who understand technology can better relate how it can be used to improve their work process.

Outcomes

This will lead to not only better technical decisions to be made but also better overall decision making. By having more staff input, the chances of staff acceptance of any technology changes that result are significantly greater and there can be major reduction in costs resulting from bad decision making as it is shown to be considerably more expensive in terms of time and money when changes need to be made later in a systems' lifecycle than in its initial stages. A policy could be implemented that any decisions require the support of at least 80-90% of the staff.

These could range from the purchase of systems that do not fulfill their needs to setting a timeframe for system upgrades. In addition, it boosts staff morale because they feel like they have contributed to the decision making process and as such would promote a feeling of having a bigger impact on the organization.

Resources

Internal – Various members of staff have demonstrated some technical skills and as such could pass this knowledge onto other members. Also, feedback from staff is also an internal resource. The computer lab used for these sessions also is a factor.

External – Universities and other schools can be used to provide training. One excellent resource would be Robert Morris University (www.rmu.edu) since they were contacted to do the technology plan for the organization and may be able to suggest training which may be helpful. There is a wealth of information about classes available and costs on their Bayer Center for Nonprofit Management web site.

Costs

With regards to training done by staff, no cost is really required except for the cost of the time associated with the training. External trainers on the other hand can impose costs which vary based on the organization providing the training and the material being covered. Robert Morris University provides a range of technology classes such as Access Queries A to Z and Creating Effective Presentations with Microsoft PowerPoint which range in price from $50 to $200.

Recommendation 2. Creation of an Online Alumni Network

This goal seeks to increase the strength of the current alumni network and provide a pull factor for additional people to join the network. This can be facilitated through the usage of technology to provide message boards and online portals which enable people to interact without physically being in the same place.

Reasoning

By creating an online presence the reach of the alumni network is broadened. It is easy to grasp that given the large amount of alumni records that are present; many alumni may no longer be living in the Pittsburgh area or even within the United States and as such may not see the value of joining the network given that they are so far away.

Enabling greater interaction between people not only within the Pittsburgh area would encourage more people to join and remain members of the network because it provides an outlet for them to express themselves with people they interacted with as a child even though they no longer live in the area.

That being said, alumni living within the Pittsburgh area are not to be left out. An online outreach also gives them a chance to interact more frequently with other alumni even if they cannot meet in person due to conflicting schedules.

The online message board also allows persons within the same area to become acquainted. For example, an alumnus currently living in the San Francisco area may be able to find someone else also currently living in the San Francisco area with whom he can interact with. This will become more likely as more alumni are located and the size of the network grows.

Online donors donate a larger percentage of their funds to nonprofit organizations than their offline counterparts and this online network can be viewed as a channel to drive online donations.

Approach

The simplest way to approach this would be the creation of an online group using web sites such as

Google or Yahoo. These sites provide features such as message boards and membership lists. All that is required for the creation of the group is a valid account with the website. The bulk of the work of setting up message boards, etc is already done.

The simplified interfaces found on these sites enable users to create to create posts about a story or something relevant to them such as what they have been up to since they have left the House. Other members can then respond to these posts with their own viewpoints. This encourages interaction and ensures that content is alumni led instead of only content provided by the House.

In addition, these sites provide features as email updates where a member can get an email either daily or even weekly containing all the posts created since they last logged into the system enabling alumni to easily keep track of other members and their opinions and ideas. Once the group has been setup, alumni can be notified and a viral effect created via word of mouth to promote increased usage of the online network.

In addition, there can be features such as "Alumnus of the Week" which enables one member of the alumni to be highlighted each week on the group home page with additional information such as what he has done since leaving the house and more background information. This is already done in the paper based newsletters and as such should be relatively simple to place online.

Outcomes

This enables a stronger alumni presence regardless of location and as such strengthens the alumni network. In addition, by encouraging constant participation by past members, their interest in kept in the organization which can lead to a greater number of repeat donations in addition to more initial donations from members around the globe.

Resources

Internal – A staff member to create and monitor the group and ensure that information is kept current.

External – http://groups.yahoo.com or http://groups.google.com provide extensive information about online groups and also provide a completely hosted solution enabling minimal use of the organization's own computing resources.

Costs

Both Yahoo! Groups and Google Groups are free of charge to use and as such, additional costs are minimal. This is especially true as there is no additional training required to do this as many tutorials are available on the above mentioned web sites in addition to the simplified interface.

About the Consultant

Jamar Parris is a graduate student in Information Networking within the College of Engineering at Carnegie Mellon University. He will be graduating in May 2007 with a Masters Degree. Upon graduation he wishes to work within the consulting field.

Appendix A.

Below is sample data from the Microsoft Excel spreadsheet where some information on the manual cards was initially stored in electronic format.

	A	B	C	D	E	F	G	H	I	J	K
1	ALUMNI DATABASE SPREADSHEET										
2	Last Name	First name	Address	Address	City	State	Zip		Year of Birth	Year entered SHH	Last year
3	Abajace	John	1109 Voskamp St.						1910	1920	
4	Abbiati	Frank	715 Pressley St.		Pittsburgh	PA		F 0481	1910	1926	
5	Abbott	Melvin	117 Hemlock St.		Pittsburgh	PA		Fa.6257	1929	1940	
6	Abel	Herman Joseph	1015 E. Ohio St.		Pittsburgh	PA			1934	1946	
7	Abel	Howard F.	2152 Lowrie St.		Pittsburgh	PA		C.4498R	1919	1929	
8	Abel	Theodore	22 Moreland Rd.		Pittsburgh	PA			1908	1922	
9	Abijace	Mike	1109 Voskamp St.						1920	1931	
10	Abijanac	David Michael	1229 Spring Garden Ave.		Pittsburgh	PA		231-2680	1940	1956	
11	Abijanac	Michael George	1229 Spring Garden Ave.		Pittsburgh	PA		231-2680	1944	1952	
12	Abmayer	John James	106 Fountain St.		Pittsburgh	PA		Fa.3038	1932	1946	
13	Absher	John George	919 Madison Ave.		Pittsburgh	PA		322-2237	1956	1969	
14	Abt	Brian Charles	1931 W. Beckert St.		Pittsburgh	PA	15212	322-4946	1974	1981	
15	Abt	James R.	104 W. Burgess St.		Pittsburgh	PA	15214	322-4388	1974	1981	
16	Abt	John P.	700 Limestone Drive		Pittsburgh	PA	15101	322-4388	1972	1981	
17	Abt	Thomas A.	806 Stanton Ave		Pittsburgh	PA	15209	821-1758	1976	1984	
18	Achilles	Gordon Alen	1905 Lookout St.		Pittsburgh	PA		A1. 1-7364	1936	1946	
19	Achilles	Norman Lee	1905 Lookout St.		Pittsburgh	PA		A1. 1-7364	1935	1943	
20	Ackerman	William Andrew	250 Walnut St.		Pittsburgh	PA		We. 1-0812-J	1932	1950	
21	Ackerman	William David	1152 Brabec St.		Pittsburgh	PA		323-2330	1962	1975	
22	Acton	Ronald Francis	1207 Madison Ave		Pittsburgh	PA		Fa. 7824	1938	1948	
23	Adair	Terry Lee	1217 Troy Hill Rd.					Fa. 0653	1938	1947	
24	Adametz	Carl Michael	829 Carpenter Wy					A1.1-2950	1937	1948	
25	Adametz	Donald Steven	829 Carpenter Wy					A1.1-2950	1936	1948	
26	Adametz	Edward Raymond	839 Lovett Way					Ce. 4729	1936	1948	
27	Adametz	Richard Francis	2113 Federal Street					Ce.1-3835	1939	1950	
28	Adams	Frank	851 Tripoli St.					Ce. 0618	1932	1941	
29	Adams	Joseph	1519 W. North Ave.					Ce. 7917	1919	1939	
30	Adams	Joseph	1037 Spring Garden Ave.						1916	1930	

Figure 1. Sample Data From Microsoft Excel Spreadsheet

Appendix B.

Below are the relationships amongst tables within the database as depicted by Microsoft Access. As seen there is one primary table, tbl_Alumni and 11 secondary tables which interface with this table either directly or indirectly.

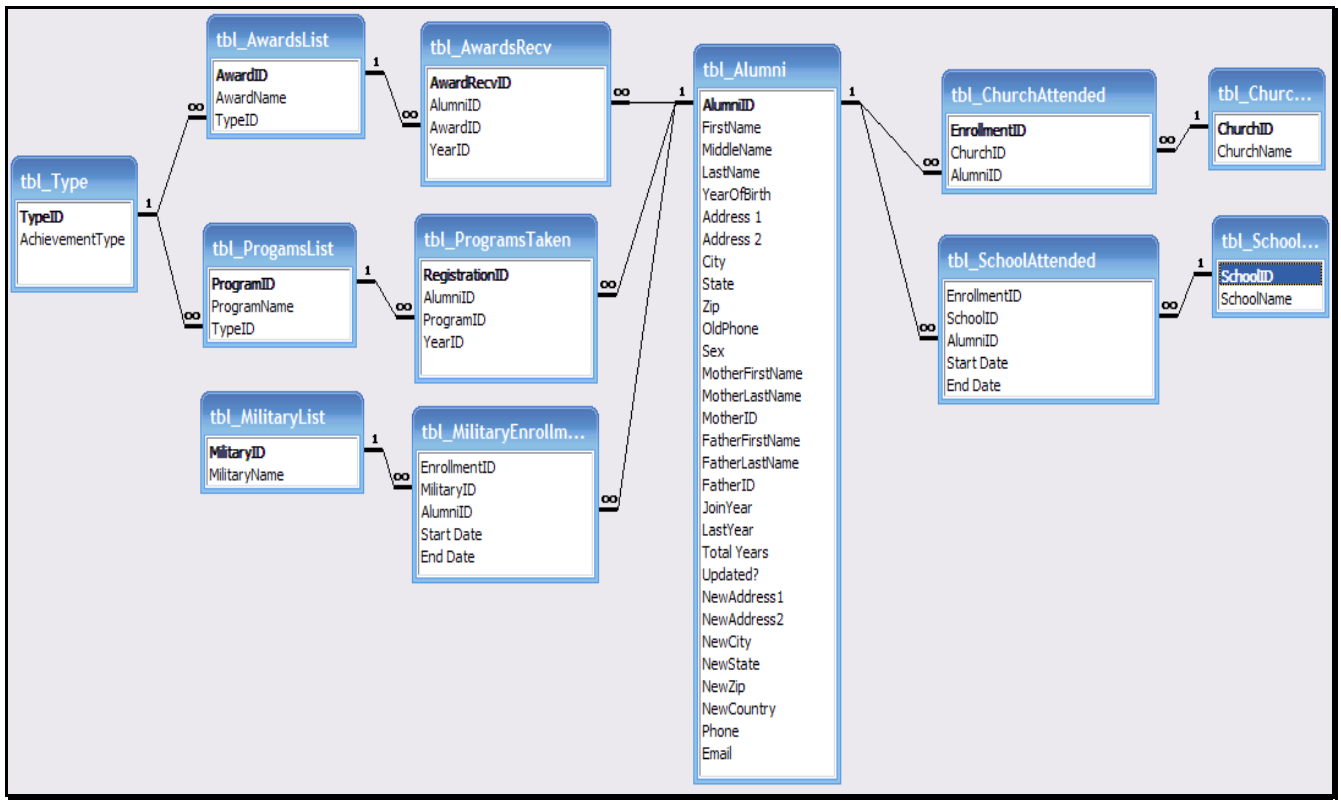

Figure 2. Database Design as interpreted by Microsoft Access

Appendix C.

Below are screenshots of the actual system created such as forms, menus and generated reports.

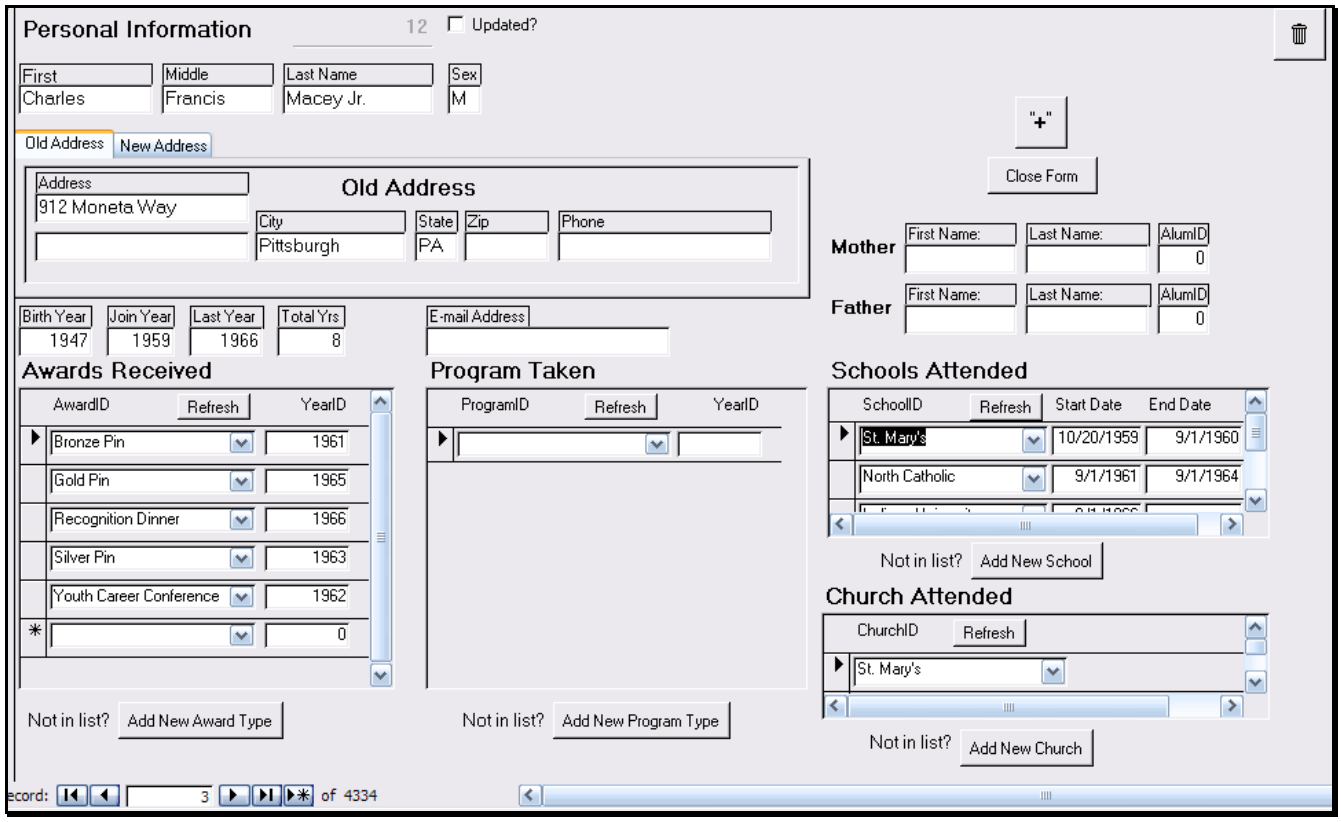

Figure 3. Main Data Entry Form

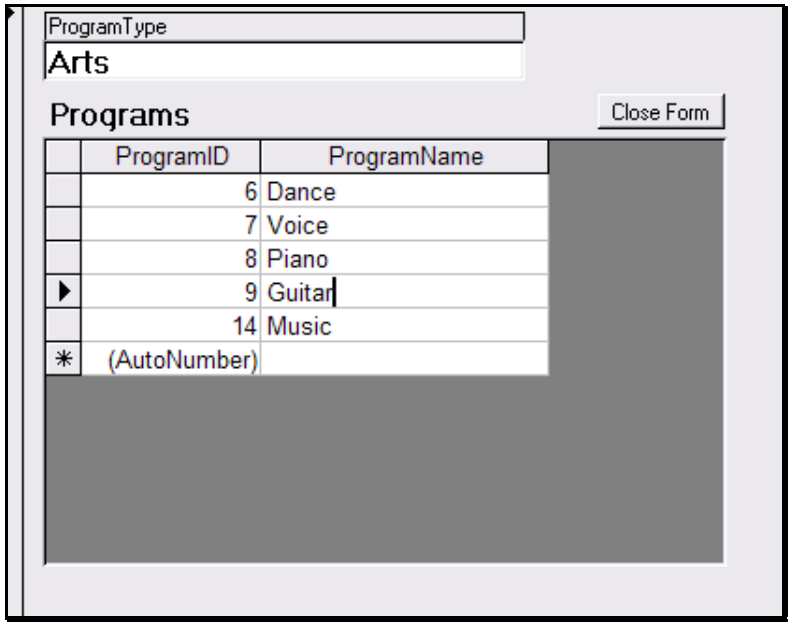

Figure 4. Form which shows list of Valid Arts Programs

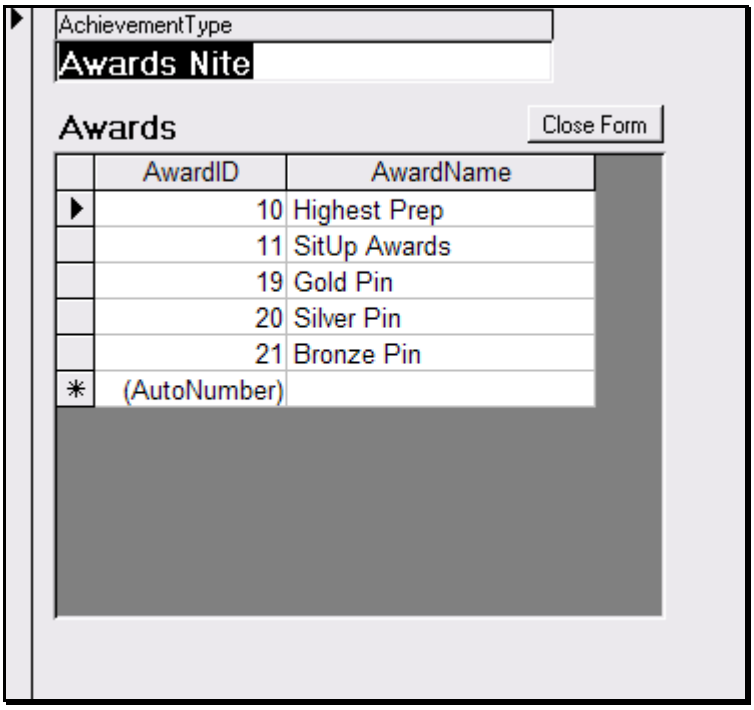

Figure 5. Form which shows list of Valid Awards Night Awards

DQRY_JoinYear [1935]-[1948]

JoinYear	*LastName*	*FirstName*	*Middle*	*Address 1*		*State*	*Zip*
1935							
	Albecker	Clarence		1963 Pittview Ave.			
	Arch	Francis J.		141 Bascom St	Pittsburgh	PA	
	Barie	David A.		2233 Pittview Ave	Pittsburgh	PA	
	Battisti	James Vincent		808 Progress St.	Millvale	PA	
	Bauer	Frank		177 Butler St	Pittsburgh	PA	
	Beran	John			Pittsburgh		
	Bey	Mosanine		248 Orchard Place			
	Bohle	Anthony		1823 Niggel St			
	Bojaic	Mathew		1310 High St			
	Bolster	Henry		2039 Veronica St			
	Bors	John Frank Jr.		999 Haslage Ave	Pittsburgh	PA	
	Bouvy	Gregory Wayne Jr.		500 Hawkins Ave	Pittsburgh	PA	
	Bracken	William Nicholas		1012 Madison Ave	Pittsburgh	PA	
	Caine	Edward		1418 Claim St.	Pittsburgh	PA	
	Carr	John Robert		717 Avery St.	Pittsburgh	PA	
	Chambers	David		423 Lockhart Street	Pittsburgh	PA	
	Coe	Eric David		2032 Lautner St.	Pittsburgh	PA	
	Cortapassi	John		1 Backway	Pittsburgh	PA	
	Duffy	Danny Michel		209 Bronx Ave.	Pittsburgh	PA	
	Ealey	Juan A.		1102 W. North Ave.	Mechanicsville		PA
	Eberz	William G.		706 Foreland St.	Pittsburgh	PA	
	Elmeier	Robert A		1136 Province	Pittsburgh	PA	
	Emrick	Robert		1923 Mt. Troy Road	Pittsburgh	PA	
	Engelsiepen	James A		124 Silver Way	Millvale	PA	
	Erk	Louis		18 Ludy Ave.	Pittsburgh	PA	
	Fabina	Frank		507-9 Chestnut St.	Pittsburgh	PA	
	Fedore	John		215 Hillwood Rd.	Pittsburgh	PA	
	Fehl	Devon		112 Shoup St.	Pittsburgh	PA	
	Franz	Norbert William		826 Spring Garden Ave	Pittsburgh	PA	

Figure 6. Sample Report