

**Information Systems Management
Course 95-822**

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Final Consulting Report

**Competitive Employment
Opportunities**

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Competitive Employment Opportunities

Executive Summary

Student Consultant, Neha Khullar
Community Partner, Chris Phelps

I. Background Information

Competitive Employment Opportunities located at 5231 Penn Avenue, Suite 300, Pittsburgh is an organization devoted to providing employment related services for the youth and adults with disabilities. The organization, which started in July 1986, understands the need for independence in today's fast-paced world and works with the mission of *improving the quality of life for youth and adults who have a broad range of physical, cognitive, sensory, and/or psychiatric disabilities by providing career exploration, supported employment, and other related vocational services.*¹

C.E.O provides employment opportunities to the disabled youth and adults. They have two main programs, for the youth and adults, where they interact with the client and understand their limitations and accordingly help locate appropriate jobs. They spend time with the client and the employer on site to help them attain a common ground and a better understanding of each other's requirements. They also help their clients with issues regarding social security numbers.

C.E.O began the consulting process with the goal of going paperless. The consultant, Neha Khullar, worked with community partner, Chris Phelps. Initially time the consultant spent time with the community partner and understood the processes undertaken at the organization. This was followed with an analysis of the current problems faced by the organization which further led to the decided scope of work which involved developing a billing database and providing training for the staff. The purpose of developing the database was to help the organization manage their client information, services offered, employee information and their billing data on the computer rather than on paper which had been the usual norm at the organization prior to the consulting partnership. The database was also going to provide the organization an easy way of gathering information, analyzing data and making reports.

The second scope of work involved providing training for the staff. Since the staff had basic technology skills, the community partner and the student consultant worked towards creating more incentives for the staff to use their computers on a regular basis focusing on usage of their email accounts. The first step was achieved by implementing an online scheduler. The online scheduler would act as a replacement to their traditional whiteboard scheduler where every staff members schedule would be written on a white board. This would help the staff use their computers regularly and would also get the staff more familiar and regular with checking their email.

¹ www.ceopgh.org

Although the training could not take place at C.E.O, increased capacity has been achieved by the online scheduler in that the staff is gradually becoming more comfortable with using their facilities (internet, database, etc) provided in the organization. The database has certainly helped the organization go paperless in many ways. Prior to the setup of the database, the organization would store all client information on paper in files. These files were stored in file cabinets and kept in the storage room. The billing information too was carried out on paper. The database is helping reduce the paperwork considerably and will be explained in detail further on in the report.

The final phase of the consulting period consisted of providing recommendations. Of the few made the one most stressed upon was the setting up of a technology committee dedicated to updating current systems, making a technology plan and helping the staff by providing training on the technology being implemented in the organization. The recommendations also included new technology that the organization could implement which would improve the efficiency of the services provided by the organization. A detailed recommendation list can be found further on in the consulting report.

The first section of this report describes the organization in detail. This is followed by the scope of work that outlines in brief the problem and the approach taken by the community partner and the consultant. It also mentions the outcomes expected on achieving the task. This is followed by a detailed explanation of the outcomes that were achieved and looks into matters concerning risks and sustenance issues that the organization might face. The last section looks into further capacity that the organization has the potential to attain that will help the organization grow to being more efficient through a list of recommendations. The recommendations have been outlined for a three year period and suggest possible changes that the organization can implement keeping in mind the mission and the goals of the organization.

During the consulting process not all the consulting tasks could be achieved while new tasks were realized and achieved. The database was successfully set up however training could not be initiated during the consulting process. This led to another approach of creating incentives for the staff through an online scheduler. Since the training could not be initiated, this led the community partner and the consultant to form a list of recommendations that would help the organization stay focused on the goals that were yet to be achieved and that have the potential to be achieved. Throughout the consulting process, the community partner took keen interest in all activities undertaken and laid great emphasis on detail while setting up the database, always keeping in mind the organization's mission and goal from this consulting process.

Competitive Employment Opportunities

Final Consulting Report

Student Consultant, Neha Khullar
Community Partner, Chris Phelps

I. About the organization

Organization:

Community Employment Opportunities is located at 5231 Penn Avenue, PA. The organization, which started in July 1986, provides employment related services for youth and adults with disabilities. The organization understands the need for independence in today's fast-paced world and works towards *improving the quality of life for youth and adults who have a broad range of physical, cognitive, sensory, and/or psychiatric disabilities by providing career exploration, supported employment, and other related vocational services*². Since the organization deals with disabled people, they have to adhere to the HIPAA procedures. This adds to the constraint on security issues and increases their paper work.

The organization's current technology vision is to go paperless. They realize that technology can help remove many redundant procedures in the organization. This will help make their services more efficient and less time consuming. The organization also faces competition from other similar non profits. The introduction of better technology will help the organization face their competition better.

Facilities:

The organization has a neat ambience and about 1-2 employees share an office. There are a total of 10 employees. Every employee has a desktop to work on. The office has a fax machine, printer and photocopy machine. All the computers in the office are connected to Microsoft 2003 Standard Edition server. There is a phone in almost every office.

Program:

The organization caters to primarily two categories – the youth and the adults. Programs are conducted to provide their consumers with the right field of work. The organization begins by analyzing the current situation of the client in terms of health and their requirements. They then go about locating work places willing to accommodate the client. The organization works very closely with the client and the workplace once the place has been finalized. They help ease the pressure faced by the client and help the work party understand their client and their disabilities. This is to help make the environment as conducive as possible for the client. They also provide their client social security numbers. For e.g.: when a disabled client comes to C.E.O for employment opportunities, the organization first takes time to understand the health issues the client is facing. They discuss the type of employment that the client

² www.ceopgh.org

is most comfortable with and then begin their search for the right match. Once a few solutions have been found, the client and a member of the staff go on sight to that location. The client receives training and every week a report on the improvement is noted. This is definitely not as easy as it sounds as the organization tries to make the client and the people he is going to associate with as comfortable as possible. Once stability has been attained, the staff member slowly withdraws and lets the client be independent. As and when problems arise, the staff is informed and goes on sight to help solve the problem. Communication with the client is then stopped after the client has successfully adapted to the workplace.

Staff:

The organization consists of the Board of directors and there are about 10 employees in the organization. The staff has expertise in their respective domains and has exemplary work experience. As they have only recently been using computers for their work hence, they do not have enough expertise in using technology. All members of staff sit in the same office at Penn Avenue and each takes care of different services that the organization provides. For e.g.: a few people are assigned the task of going on sight. A few are responsible for dealing with disabled adults, a few are responsible for the youth programs, and the rest take care of the financial and billing issues of the organization.

Technical Environment:

Every staff member has a computer to work with. Every computer is connected to the server. Thus, every employee does have a fair knowledge of working on the computer. The work of the organization is done on paper; the documents are filed and kept in a separate room for privacy issues.

Technology Management:

As the staff does not have sufficient technical expertise and since their usage of technology is minimal, they do not have any hard and fast rule that is followed for managing the technology they use. The organization does not have a strategy or a fixed plan that is followed. There is no staff member that has been put in charge of managing the server or the computers and currently there is no technology plan. The organization is looking to initiate this as and when enhances in technology are made within the organization.

Technology Planning:

The organization had set up their server and their internet connections two years back with the help of a consultant. They had then formulated a Technology plan that would help them keep their systems up to date and well managed. The plan emphasized on maintenance and had scope for scalability. The organization was able to achieve most of the plans that were started. The plan however was not been followed consistently and has not been updated. The technology plan made by a CMU student who previously worked with the organization is outdated. The Executive Director is the “techie” of the organization but he has not updated the plan.

Internal and External Communication:

The organization has very good internal communication. Every employee knows the other and the communication channel is open and friendly. Every employee is aware of the other's schedule and the executive director communicates with everyone in the office through email. The organization communicates with their consumers and other organizations they are involved with through paper by fax or post. The organization has a website and they all have email accounts.

Information Management:

Since the organization has to adhere to the HIPAA rules, they are required to keep private the details of their consumers. Their disabilities or their background is stored in a file under their name. It is updated as and when the consumer makes progress in their related field of work or when they obtain their jobs. These files are then stored in file cabinets and locked to maintain privacy. None of this is carried out on the computer. They have all their billing information stored in files and they do not have a database.

II. Scope of Work

Major Consulting Task -I

The Problem:

The first major consulting task to help the organization go paperless was to set up a database that processed the billing information for the entire staff and stored client and staff information. The organization had all the basic facilities needed to go paperless. It had a server to which all the computers had access. It now required application of these facilities. The first task that would enable this was the setting up of a database. Setting up of a database would help the staff store all their data on their computers and store it on a database for storage purposes. This opportunity would help in enhancing their services. A lot of their paper work would reduce and this would give the organization more time for their consumers as it would give them more time to locate employment opportunities for disabled adults and youth.

The Approach:

To begin developing the database firstly the CP and I examined all the processes that take place within the organization. We then looked for redundancies in the processes. Once analyzed, we moved on to the next step of making note of all the tables we would be forming. Once tables were formed, the need to provide security to this system would be ensured. We chose not only to manage the database but also add features for privacy and security of the data in the database. The CP had previously worked with Microsoft Access and was quite comfortable using it. Although, he had not received any prior training and thus certain concepts were new to him. I helped the CP in areas that he was unfamiliar.

The Expected Outcome:

The outcome of developing this database is that it will considerably reduce the paperwork of the organization. They will have fewer troubles when trying to store their information and will have the benefit of security and privacy for their consumers. Currently the organization has a room filled with cabinets where files have been stored of every consumer who has taken the benefits of this organization. The room can remove most of its files through the implementation of the database system.

The implementation of a database system will have its impact beyond that off the paper work. It will help improve the working of the organization. It will make their procedures less cumbersome giving them more time to tend to the needs of their employees. The facilities will then be utilized much more efficiently and this may help the organization start up more programs for the youth and adults seeking their services. The staff though will need to put in more effort in learning how to use the database and in time will enjoy the benefits of it. Technology management will increase with the database system as regular updating will be necessary and backing up the server will become even more crucial for the organization. The organization will then need to have a technology plan to ensure that the organization progresses in time with its use of technology. Information management will become less cumbersome with usage of the database but will be highly crucial. The HIPAA rules require that any organization that is working with people with disabilities keep their information very secure and private. Thus, privacy will be highly important for the organization. I am not very confident in this area and will need to do some research before I can help the CP with security issues.

The database could be developed within the period of the course as the organization had the resources to enable the development of a database. The Community Partner was highly motivated and took keen interest in learning about new technologies. The task fit the skills and background of the community partner and the consultant. The community partner will definitely be able to adapt to the implementation of the database and has a tendency to help his staff when problems occur. The implementation of the database will be done using Microsoft Access. This is very basic and will be easy for the entire staff to learn. Therefore, the work is sustainable as the staff will be able to adapt to this very quickly. The risk involved in this is the issue of privacy. Security is of utmost importance and needs to be added to the system carefully. In addition, another viable risk is that a few months later the CP may no longer enjoy using the database and may decide to change the system once again. If the staff does not respond well to the database, this just might happen.

Major Consulting Task- II

The Problem:

The second most important task that needed to be carried out was that the staff needed training in order to easily adapt to the coming changes. Since the entire staff was not well versed with the use of technology, it would be difficult for them to use the database effectively. This would require a little bit of training and practice. The

organization would benefit if they applied technology faster and earlier on. To be able to break their fears and to help them adjust to the changes a few training courses are necessary. However, this requires time and some money.

The Approach:

To start with, the CP and I chose to first provide more incentive for the staff to use their computers and emails regularly. We achieved this by implementing an online scheduler. Having an online scheduler meant that the staff will use their computers more often and would make an effort to use their computers. This approach would help in breaking the fears of a few of the staff members.

The Expected Outcome:

The outcome of having training courses and enabling an online scheduler is that it will make the staff more efficient in using the services provided to them and will make them more acceptable to newer technologies that the organization will add in the coming years. The approach to this is suggesting a few courses that are offered online and at various places for lesser rates for Non-profits.

Training almost always has its benefits in the long term. The staff may have people with an aptitude for technology and training might help them break that barrier. Having people with better awareness of technology helps the organization grow. It makes the organization less dependent on paper work and helps quicken their processes. Training the staff will help improve Technology management and information management. Since the organization works with disabled youth and adults the information they carry is very critical and using technology will make this easier for them. In addition, this will improve the general technical environment of the organization.

The feasibility of this task depends entirely upon the budget available and the expense that will incur for the training. There are two risks involved. If the staff does use outlook for their emails then it will not be a good idea to configure it on the server as then their emails will no longer be private. The second risk is involving the staff's attitude and willingness to these training programs. The staff does have time for this training as the training centers have very flexible timings. The risk that may hamper this is lack of enthusiasm by the staff. The training can be successful only if the entire staff is willing to put in time and effort into learning about databases, etc.

III. Outcomes Analysis and Recommendations

Outcome I– Setting the database to help the organization undertake billing services and store client information.

Outcome achieved:

The goal of the organization was to go paperless. One of the most complex and lengthy processes carried out in the organization are the billing services done for the 10 employees at the organization. The second very lengthy procedure undertaken is

the storage of client information. By setting up the billing data on a database, all the necessary reports are generated and the calculations are carried out in the reports itself reducing the billing work for the person in-charge.

The database was set up in partnership with the CP. We choose to use Microsoft Access to solve the problem and created tables for storing all the necessary data related to client information, employee information and employee billing services. The community partner and the consultant began with an easy formulation of three tables namely: Staff Information, Consumer and Billing. The Staff Information stores the staff details. The Consumer table stores the client information and the Billing table stores the required data (billing hours, non billing hours) for each staff for each day so that the necessary reports can be generated by the Billing in-charge on a bi-weekly basis. We then made forms that could directly be used instead of having to access the tables and also made reports that the staff and the billing in-charge can use for their daily work.

For the required consulting time frame, the database has been tested and currently information is being updated on the database to ensure daily usage. By setting the data on the database, each employee can now fill his or her billing and non-billing hour for each day. Then the person in-charge can generate reports for the time period required from the database. The reports generate the total non-billing and billing hours for each employee. This very report is sent to the CP and he verifies it by checking the data stored on the database. This is a mandatory procedure at the organization. The report successfully saves the in-charge time and reduces the paper work considerably. Prior to the database, every staff member was required to fill in their timesheets for each week. This was processed by the billing in-charge and he would generate reports for the month for each staff member. The outcome of having set up the database is that now less time will be spent on paperwork mentioned above. The work will be much faster and chances of making mistakes or loosing information has been minimized. Prior to the database there were times when the staff would enter the required data wrong for e.g. the funding source would be entered wrong taking more time for the billing in-charge to rectify the error. On the database, the form explicitly mentions the funding source and thus chances of mistakes have been eliminated.

Another, very important advantage has occurred in the auditing process. Records are verified faster and the process is less cumbersome, since the database generates the reports that are needed by the auditors without having to look up the files.

Another very crucial outcome of the database has been the appreciation of technology and an increase in the awareness of technology. Since employees use the database regularly to feed in their data, they have become more aware of the functions of the database. This has initiated them into learning more about databases and hence has helped them learn something new about technology. Out of 10 employees there were about two to three employees that were comfortable using simple Microsoft office tools such as excel, but with the introduction of databases in the system the

employees have been making a conscious effort to learn how to use the tools offered and are improving their skills.

Contrast to the state before the partnership:

Prior to the setting of the database, the organization carried out all their functions on paper. Client information was stored on paper files and kept in file cabinets. All the billing and financial services were stored on paper and ledgers. The forms were lengthy and time consuming. More time was spent on filling forms and on the lengthy billing procedures. The accumulating paper work further added on to complexities during auditing. To verify all the data, lots of paper used to be accumulated and chances of mistakes or losing information was very likely. The database is quickening the work performed in the organization. It is easier to verify data, collect past information and store new information. In addition, it helps the organization focus their energy and time more on clients than on their paper work. The organization was having a tough time trying to maintain their records. The billing in charge had to perform considerable amount of repetitive work which consumed a lot of time and had potential to lead to errors. However, with the database the billing in-charge is able to submit his work well in time and is able to assist the CP in analyzing the unused non-billing hours per day for each employee.

Outstanding Opportunities:

There are plenty more opportunities for the organization to better their services and achieve their goals. For e.g. the financial work of the organization is maintained in ledgers or on Microsoft Excel and instead can be done using QuickBooks. By implementing QuickBooks the organization will have a better and more efficient way of processing and storing their financial data. This will again lead to saving in time and less cumbersome procedures. The organization is looking to implement QuickBooks at the start of the fiscal year. The organization is also looking to extend the functions of the database further by implementing a content based system. This could not be achieved right away during the consulting partnership as the organization had just implemented a database and needs to put the currently established database to use.

Increased Capacity through the outcome:

The outcome of setting the database has increased capacity by reducing time consumed and removing redundant work. The daily usage of the database will eventually lead to a reduction in physical space consumed in the rooms as file cabinets and in turn increase the storage capacity of client information in the form of a database. By decreasing the time taken to carry out functions like store client data and billing services, the organization can become faster in their response to the clients needs and can pay more attention on site with them, as they do not have to sit at office completing the paper work all day. They have now started investing more time in finding better and more secure jobs for their clients and are paying more attention on attaining new technical skills, which is helping them better their processes within

the organization. It can clearly be observed that the organization has certainly come a long way from where they started and have potential for more. Thus, the organization's capacity has certainly increased. Through this experience with the consultant, the CP has been able to further enhance his skills in using Microsoft Access. During the consulting process, on various occasions the CP had been asked to update one of the tables if any information was missing or not filled in correctly. The CP efficiently made any changes needed in the tables and generated the reports without the help of the consultant.

Sustenance and Risks involved:

The database will be maintained by the database administrator that will be appointed by the organization. The person will be chosen on the basis of expertise in using Access. Currently, the CP is in charge of managing the database. A technology committee has been proposed for the organization and it is likely that the technology committee along with the staff will be able to appoint a database administrator who can handle all the responsibilities of managing the database. Back up will be regularly generated. However, for the database to be sustained for a longer period, the most important criteria is for all the employees to learn what databases are, what their functions are and why they are important. Once everyone in the organization has begun to fully use the database, it will become part of their daily lives and certainly will become an important tool for their work. They will then be able to reap most out of it and will be able to better sustain it and maintain it.

In the next 6 months, sustainability will not be an issue however, over a period of 18 months the requirements of the organization may change and accordingly modifications will have to be made to the database. It is very important that the staff know how to make these changes else, the database will not provide them with the data they require. This definitely poses as a very high risk for the organization. The risks associated that will not enable the outcome to be sustained are if the organization does not know how to update and maintain the database. It would also be risky if they are not regular in updating and maintaining the database. In addition, if the organization does not have a technology plan that will address issues of scope of the database, there are chances that the database may fail. Also, if the staff is not well equipped to use the database then they will continue to use paperwork and hence having the database will be pointless. Another very important risk involved is the security that needs to be maintained with the billing information and the client information. The organization should set up a technology committee. The committee can look after the technology issues the organization faces and can take responsibility for the maintenance of the database.

The New Vision:

The organization has been able to quicken their processes. They have been able to save time in the day and the staff is becoming more aware of technology. The organization has not only realized the importance of having the database and reaped its benefits; they have also realized the importance of technology and how technology

can help simplify a lot more complex issues for the organization. They are now able to help more clients in the day and can work on providing better employment opportunities for the disabled. This has led to newer visions for the mission. They have begun to realize that technology can help them in many ways. The organization has decided to invest a certain amount of time and money in acquiring technical skills on databases and websites. They have also begun to detect more faults with their system and are trying to find newer quicker technologies that can help solve these issues, e.g. they are planning to buy QuickBooks for their finance department.

Outcome II– Setting goals for the organization through recommendations for future reference.

Outcome achieved:

The outcome of setting goals is to gain a sense of direction and focus which will help the organization progress. Vision, Strategy and Recommendations all listed in the recommendation are being used by the organization as guidelines to follow up on the work that could not be completed with the consultant due to the short time frame of three months. The recommendation list is intended to help the organization make further improvements in their current system. It proposes ways of incorporating the suggested recommendations (on their website and their current database) which are stated further on in the report.

Contrast to the state before the partnership:

Prior to this, the organization had another technology plan of which they incorporated about 80 percent of the recommended additions/changes. For e.g. they did not have an internet connection or a server and on having implemented both they have enabled efficient communication system, have built a website and use email regularly. The current list of recommendation is helping them go beyond their previous changes. They are now looking to modify their website and are also considering installing a remote desktop system to enable work from home. As can be seen the organization that once did not have computers or easy communication channels has now built a database, has a website and are looking to better their current system. The organization has begun to appreciate technology and is looking for ways to improve their services.

Outstanding Opportunities:

The organization cannot depend entirely upon a short list of recommendations highlighting possible future ventures. To progress in bigger ways, the organization will need to set up a technology plan which will have a set of outcomes the organization is looking to achieve in the coming three years. To start with the organization may need to look into setting a technology committee dedicated to enhancing the current systems and processes in the organization.

Increased Capacity through the outcome:

The outcome of having a recommendation list has helped the organization gain some direction on how far they wish to incorporate technology in their systems. They have also found ways now to enhance current systems that are not being utilized to its maximum potential for e.g. the database that is being used for the billing services and storing client information can be further bettered.

Sustenance and Risks involved:

The recommendations have been made keeping in mind the time frame of three years. The first 6 months the organization should be spent enhancing the already present systems. For e.g. they could begin by improving their website. They will simultaneously be making changes to their database as requirements change. The next one year will then go into the remote desktop and replacing old obsolete computers with better ones. They will also look into the possibilities of giving a few laptops to the employees who spend most of their time onsite with clients. The risks that are involved with the technology plan are if it is not followed. This will lead to a standstill for the organization. To sustain their current systems they will need to carefully analyze the recommendations made and will have to find the resources to help carry those out. Also to implement the remote desktop they will require a lot of external assistance and without planning this plan could fizzle out. The plan can be better followed with the set up of a technology committee who will help the organization grow with better technology and will help amend the plan as and when necessary.

The New Vision:

The recommendation list in itself defines the vision of the organization. The outcome of having this on paper defines the vision in black and white. Having spent time on making the list of recommendations, the organization has now begun to think further for e.g. wanting to have laptops to work on, remote desktop services.

Outcome III – Implementing an online scheduler

Outcome achieved:

The main motive behind implementing an online scheduler was to provide an incentive for the staff to use their email more often and use the computer more often. Despite having sufficient facilities, members of the staff were hesitant in using their emails, causing breaks in the communication channel. There have been times when the CP would send out mails to the entire staff regarding their staff meetings which were not checked by a few members for over months. Having an online scheduler makes it necessary for the staff to check their mail regularly and update their schedule online.

Contrast to state before partnership

Prior to the implementation of the online scheduler, the organization used to write their schedules on a white board that is present near the receptionist's work place. Everyday the staff would fill in their schedules on the board but now the organization needs to go online and login into the common account of the organization on yahoo and have to fill in their schedule online.

Increased Capacity through outcomes:

Having an online scheduler, the CP will now remove the white board leaving the staff no alternative but to login into the yahoo account online and fill in their time schedules. By doing this everyday, the staff that were hesitant in using their computers or the internet will get habituated to doing the same. Mails will be regularly checked and communication between the staff members will take place faster and be more efficient. Also, now when any member goes out of town, he/she can still access the web and find the schedule for the following day back at the organization and keep themselves updated at all times.

Sustenance and Risks involved:

The online scheduler is currently being implemented through yahoo calendar and is being used by 10 employees. As and when the number of people in the organization increases, the yahoo calendar may not be the most apt way of implementing an online scheduler and other alternative ways will need to be found. The risk involved with this scheduler is if the staff does not update their schedules for the day regularly on the online scheduler. This way the staff will still refuse to use the internet and if any member is out of town they will not be able to update themselves of the work schedule for the day without having to make a phone call at the office.

The New Vision:

By implementing the online scheduler the CP has now been able to further find alternative ways to increase the incentive to access the internet and check mails regularly. By regularly using the internet and checking their emails the staff will be able to appreciate technology better and will be more accommodating to newer technologies that the organization may implement in the future.

Recommendations

Vision

Competitive Employment Opportunities, a non profit organization, works with the mission of improving the quality of life of adults and youth with disabilities, providing them with opportunities of career exploration, supported employment and

other related services. The organization thus envisions better and faster working technologies, better understanding of these systems by the staff that will eventually help them serve their clients efficiently and help the organization better their processes.

Competitive Employment Opportunities' technology vision is to improve their current systems with quicker and more efficient systems, help improve staff understanding of current and future technologies and to equip the organization with a remote desktop service so as to enable more time usage with clients on site. By providing staff training the staff will be able to better understand their current systems. They will be able to work efficiently and this will result in increased productivity. With having a well trained staff the absence of one will not affect the working of any process that is carried out at the organization. Technology training will also prove beneficial in that it will help the staff appreciate technology and will provide the opportunity for keen employees to contribute in future upgrades in the systems implemented in the organization. By upgrading the hardware, the organization will be able to implement new software. They will be able to work on faster computers and this too will lead to increased productivity. The implementation of a remote desktop service will provide the staff with access to their files from home. At the organization, a lot of time is spent with the client on site, whereas the records are maintained at the office. With the remote desktop service, the staff can spend more time with the client on site as they will have access to their files in the office from home. Also, the organization is looking to change their location and having the remote desktop service will ensure that their daily work and will not be hampered by the change.

Goals

The organization has set three main goals that they look to achieve in the coming three years. The organization has set these goals as per their requirements and looking into possible future happenings within the organization.

Goal I:

Upgrading both hardware and software infrastructure in the organization.

Goal II:

*Investment of time and money on *technology training programs* for the staff.*

Goal III:

Implementing a remote desktop service in the organization.

Strategies

Goal I: Updating hardware and software in the organization

The organization will first implement all hardware upgrades and then the necessary software upgrades as per their requirements. To ensure that the organization has computers that have more memory capacity and better speed, the organization will first conduct an analysis of all the computers present in the organization. They will

make note of the computers that need immediate attention and will upgrade the computers in the order of highest priority.

The organization currently has computers running on Pentium III and quite a few running on Pentium II processors. Their computers are currently 'slow' and time taken to upload documents is very high. For the three year timeline the organization will first look into replacing the oldest computers present. The organization will firstly work on replacing the Pentium II processor computer's with Pentium IV. The organization will then look into upgrading RAM of all the computers to support more memory intensive software. This will also help improve the speed of the computers. Preferably the upgrade should ensure a 512 RAM for all the computers in the organization. The organization should also look into buying a few laptops. A lot of the staff works on site with clients and have to report back to the organization to complete the necessary paperwork. Having laptops will provide the facility of completing their paperwork on site saving them a lot of time. The computers in the organization are running on either Windows 98 or Windows 2000 platform. The software upgrade will be carried out after the hardware aspects have been taken care of. The computers will need to be upgraded to a Windows XP platform. By upgrading all employee computers to an XP platform, better and more software can be easily supported on the system. The organization will now be able to install software like QuickBooks, which they plan on adding to their system starting the next fiscal year.

Upgrading the hardware and software infrastructure is extremely vital to the organization for sustenance of their process. They will also be able to process their data faster. Having a better operating system enables the organization to add more functionality to their current systems and will also allow then easy installation of new software. This will further lead to better productivity and less time will be spent in processing their information. The organization is looking to implement a content based website and these upgrades will ensure its successful implementation.

Approach:

Replace existing old computers with new ones

- 1) The organization should first note the number of computers that need to be replaced and sort them as per priority.
- 2) A timeline for purchase should be made based on the following:
 - a) The urgency of the situation
 - b) Special deals that can be found
 - c) Contacting companies from where these purchases had previously been made
- 3) Hire an external consultant to help connect the computer to the existing network and the internet.

Upgrading the RAM, operating system and software for the organization

- 1) Hire an external consultant to analyze all current computers being used by the staff.

- 2) Data regarding the computer RAM, current operating system and current software running on the computer should be noted and new requirements should be listed.
- 3) The organization should research prices for their current requirements using external resources or through the consultant.
- 4) The consultant should upgrade the RAM, operating system and any necessary software based on the organization's requirements.

Purchasing new laptops

- 1) The organization should first make a list of the staff that works on site and accordingly agree on the number of laptops that need to be replaced.
- 2) Look for special deals and then according place the final order.

Outcomes:

Outcome	Future measure	Current measure
By upgrading the hardware, the computers will run faster and will be able to support the remote desktop service.	On upgrading the hardware, the staff will be able to notice a considerable decrease in time taken to upload documents and to process their data (billing, etc.). Also the consultant will be able to measure the difference on upgrading the RAM. On moving to a higher operating system, the organization will be able to implement newer software. Although, the organization is not looking to move onto a content based website immediately, they will be able to support these changes as and when they take place.	Currently the staff is aware of the time it takes to boot the computer or upload documents. They have access to minimal functionalities and are conscious of the necessary improvements that are much needed.
Upgrading the software will lead to increased capacity of technology.	The organization has limited knowledge of software and technologies that can help them make their processes faster and can help improve their service to their clients and within the organization. Adding new software will help increase the capacity	Currently the staff is using the basic software tools and has potential to increase their capacity.

	of the organization not just in terms of functionality but will give the staff an opportunity to learn about newer technologies.	
Purchasing laptops will help save time and quicken the work of the staff that works on site.	With laptops to work on, the staff that works on site will be able to save all their work on excel sheets and on the necessary forms and can upload those to the database the following day. This way they can spend more time with the clients on site, helping them find jobs and help them with their training. This will also help them in easily maintaining their billing data and client information as and when required.	They currently have no laptops to work with.

Internal Resources:

To ease the process of implementing the above stated recommendation, the organization should start by first organizing a technology committee of about three members of the organization. The committee should highlight their timeline and their budget for these recommendations and future plans they wish to carry. They should also conduct surveys on a regular basis to ensure that all employees are comfortable with using their computers and are not facing any recurring problems.

External Resources:

The organization is going to purchase laptops, replace existing old computers with new computers and will purchase new software. The organization will have to look up special offers and deals on websites and also have the option of hiring a consultant to help assist them with the implementation of the above stated. The following sites mentioned will be of great use to the organization in finding good deals that will help them purchase these computers in bulk:

<http://www.techsoup.com>

<http://www.Dell.com>

<http://www.Bestbuy.com>

<http://www.ebay.com>

<http://www.amazon.com/gp/homepage.html/104-0414864-0166348>

The organization should continuously look up eBay and Amazon to look for computers and laptops that can be purchased. They should also look up Dell and Bestbuy for special offers. Tech soup also offers a lot of software packages for non profits at lower prices and this can certainly prove beneficial to the organization when they wish to purchase QuickBooks.

Budget:

Item	Price/one item (\$)
New Laptop (Toshiba Satellite A105-S2001 15.4" Notebook PC (Intel Celeron M Processor 390, 512 MB RAM, 60 GB Hard Drive, CD-RW/DVD-ROM Drive) ³	\$700.00 (The organization should set their range to \$650-\$850)
New Computer	The range should be set to \$550-\$850 ⁴
QuickBooks (Premier Manufacturing & Wholesale Edition 2004) ⁵	\$45.00

Goal II: Investment of time and money on technology training programs for the staff.

The organization has slowly been moving towards improving their services by introducing new software and upgrading hardware. But in order to sustain this growth, the organization has increasingly become aware of lack of expertise in new technologies and existing ones. The organization is currently looking to form a technology committee comprising of about three staff members who can “lead the way” by attending training on current technologies and then impart this information to the other staff members. With increased awareness on technologies, the staff will be able to debug their errors more efficiently and will also begin to increase their appreciation for technology and will cultivate in the form of visions for the future. By training the staff, time will be saved due to improvement in technical problem solving skills. This will further lead to an increase in the organization’s ability to meet its mission. This will also help the organization move forward and improve their current systems. For e.g. the organization has recently set up a database that handles the staff time cards and performs the organization’s billing services for the staff. By providing training on databases, the staff will be able to understand how the database functions, will be able to appreciate the implementation of the database and will also be able to

³ http://www.amazon.com/gp/search/ref=sr_nr_i_1/104-0414864-0166348?%5Fencoding=UTF8&keywords=laptops&rh=i%3Aaps%2Ck%3Alaptops%2Ci%3Acomputers&page=1

⁴ http://www.amazon.com/gp/search/ref=sr_nr_i_1/104-0414864-0166348?%5Fencoding=UTF8&keywords=laptops&rh=i%3Aaps%2Ck%3Alaptops%2Ci%3Acomputers&page=1

⁵ <http://www.techsoup.org/stock/product.asp?catalog%5Fname=TechSoupMain&keyword=QuickBooks&product%5Fid=G-40157&cg=searchterms&sg=QuickBooks>

generate their queries as and when needed. The organization will also be able to further assist the CP in making changes to the tables as and when the organization's requirements change.

By investing time and money in training programs, the organization will be able to increase their capacity through complete utilization of their software and will also be able to help train new staff or will be able to perform the functions of any staff if for any reason they leave the organization.

Approach:

- 1) The organization will first have a questionnaire filled by all members of the staff. The technology committee can set up the list of questions based on the current situation of the organization and the staff members. The survey will contain a list of technology oriented questions which will identify staff members who face difficulties while working on current facilities like Excel or Word. The questionnaire will also identify programs the staff wishes to have training on. The CP and the technology committee can analyze the survey and locate key areas where problems are being faced.
- 2) The committee can then make a list containing the list of programs training has been requested upon by the staff. This will then be arranged in terms of priority
- 3) A budget will then be chalked for the current fiscal year and the list of training programs for that year will be noted.
- 4) The organization will then have to research external resources stated later in the document and note the number of feasible training sessions that can be undertaken.
- 5) The number of staff for each of these sessions will then be decided upon by the committee.
- 6) The organization should then enroll the staff for those sessions.

Outcomes:

Outcomes	Future Measure	Current Measure
Staff members will be able to save time due to training.	Upon receiving training the staff will be more efficient and will be able to work on their software and programs much faster and more comfortably than before. They will be able to debug their errors faster and with a lot more ease as they will be able to better understand the system.	Currently, there are quite a few employees that are unable to work on current software and programs and require assistance while they are working on them very often. This makes them slow in their work and also affects the work of other employees in the organization.
The staff will be able to better appreciate and understand technology	With the implementation of the database underway, the staff will be able to	Currently a few staff members are hesitant in using the available

	<p>understand the importance of having this database set up. They will soon become quite dependent on the database for their processes and will hence be able to appreciate it. Better understanding of technology will help when upgrading this database in the future.</p>	<p>software on their computers and are unable to understand or appreciate the available software.</p>
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Internal Resources:

To ensure that this recommendation is carried out, the organization should involve the technology committee. They should then utilize the questionnaire and have more surveys carried out throughout the year indicating the performance of each employee and make note of the improvement the training programs are causing within the firm.

External Resources:

The staff can make use of other non profit organizations that deliver training on certain software (for e.g. databases, PowerPoint and excel) and can also make use of the online training programs or can personally visit training centers that help impart knowledge on the required software functionalities. The technology committee can try accommodating this in their budget and could make use of the following sites which will help assist the organization in finding the correct training programs they require and will give more insight on the costs that might be incurred:

www.eBay.com

www.Amazon.com

www.techsoup.com

<http://tutorials.beginners.co.uk>

<http://databases.about.com/cs/tutorials/>

<http://www.computer-training-software.com/acces2000-t.htm>

<http://www.internet4classrooms.com/on-line2.htm>

Budget:

The budget for this will depend entirely upon the staff members requiring training and the platforms that they require training on. The organization will also have to have to decide upon the time that needs to be invested in training per week. On the basis of this data, they can then decide their approach and accordingly can fit that to the budget planned. They will firstly need to decide which applications need understanding and immediate understanding. Since the organization has recently started using the database for their billing purposes, the organization can start by first organizing a few training sessions on databases. The organization is also looking to implement QuickBooks in the coming fiscal year and can provide training to the required personnel to ensure maximum utilization of this purchase.

Goal III: Implementing a remote desktop service in the organization.

The organization has recently been looking into making work a lot simpler for the staff by setting a remote desktop that will allow the employees to access their files in the office from home. They will then be able to work at home and store their files back in the office. The organization is looking to shift their location to a smaller place and can do with a few members working from home. A few staff members work on site with the clients where they impart training to help them secure jobs. They also work on site and note responses of the client and difficulties the client faces during the training period. The staff then usually reports back to the office and completes their paper work and stores the information they gathered on site in files as Excel or information on the database. If a remote desktop service is implemented the organization will be able to have its staff work for more time on site with the client and they will not lag behind in their work as they will be able to follow it up from home. The organization has also been thinking about changing its location and shifting into another office. By having a remote desktop service they are looking to reduce their office space by reducing the staff present at work in the office and yet have all their processes taking place. This way they will be saving money on their rent and will also be able to spend more time with their clients.

In order to implement this, the organization will require software installed on the computers back at home from where the office files are being accessed. The organization will also have to upgrade their operating platform to Windows XP Professional as this provides a remote desktop facility. On installing this software to their home computers they will be able to access all their files from home. They will also have to ensure that their computers in the office remain on for that period of time for which access is needed.

Approach:

- 1) The organization should hire an external consultant who will evaluate their current system. They can look into a paid consultant or can opt for student consultants from Carnegie Mellon University under the Technology Consulting in a Community course.
- 2) The organization would need to upgrade their current systems to Windows XP Professional to support the remote desktop service.
- 3) The consultant should then suggest the software that needs to be installed on the computers at home.
- 4) The organization should research sources for this software
- 5) The consultant should implement the system
- 6) The consultant must then test the system and work towards the security aspects of this service.
- 7) They need to follow this with a training program on how to use this service and how to tackle possible hurdles when using this system. This can be organized by the technology committee.

Outcomes:

Outcome	Future Measure	Current Measure
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<p>The remote desktop service will provide staff with more time for their clients.</p>	<p>With the staff working on site, they will be able to work at home and will be able to update their necessary files from home. This removes the need to report to the office and thus time spent on coming back to the office and working there for late hours will be eliminated. They can now measure the time spent at the office prior to this service and the impact it has now.</p>	<p>Currently this system is not implemented and hence the work for the staff working on site is extremely tedious and tiring. They are not able to dedicate too much time on site and have to work for longer hours.</p>
<p>The remote desktop facility will help ease the work of the staff.</p>	<p>With not having to report to the office after having spent time on site with the client, the tired staff member can sit back at home and can update all their information. This way the staff member can keep all his/her work up to date and can also work with much ease. A survey can be carried out on this service. The feedback will clearly suggest the staff appreciation for this remote desktop service.</p>	<p>Currently the staff has a very hectic day due to on site work.</p>

Internal Resources:

To ensure the implementation of the remote desktop service, the organization should have this stated clearly in their technology plan. Also the members of the technology committee should be involved with the set up of this service. They should assist the staff and should start by having the correct configuration on their computers to be able to use this service.

External Resources:

The organization will need an external consultant for this setup. They will also need to provide the staff members with training on this system explaining how remote desktop services function. They will also need to carry out some research on the prices of the software or can take help from the external consultant. The organization could make use of the Technology Consulting course that is conducted at Carnegie Mellon University and can take help from a student consultant. This will help save on additional costs of having a consultant.

<http://www.microsoft.com/windowsxp/downloads/tools/rdclientdl.msp>

Budget:

The budget for this service depends upon the number of computers that are needed to support this service and also depends on the software that is being implemented. The organization will have to get feedback from the external consultant on the possible ways of implementing this service and will then have to find the cheapest and yet secure software to enable this. Also the technology committee can look into the expenses of having this system from the start of the coming fiscal year and can accordingly plan a budget to enable this remote desktop service.

About the Consultant

The student consultant, Neha Khullar, is currently a graduate student at Carnegie Mellon University. She is pursuing her Masters in Information Systems Management. She aspires to continue doing consulting work in areas of technology and business strategy.

Appendix

The diagram shows the billing form that will be used by the staff and the billing in-charge on a daily basis.

The screenshot displays the Microsoft Access interface for a database named "Billing". The window title is "Microsoft Access - [Billing]". The menu bar includes File, Edit, View, Insert, Format, Records, Tools, Window, and Help. The status bar at the bottom indicates "Record: 365 of 365" and "Form View".

The "Billing Form" is displayed in Form View and contains the following fields:

- Employee Number:
- Date of Service:
- Consumer Number:
- Funding Code:
- Service Code:
- Non-Billable Description:
- Non-Billable Hours:
- Billable Hours:

Figure A.1: Billing Form

The diagram below shows the Billing Summary which shows the relationship between the tables.

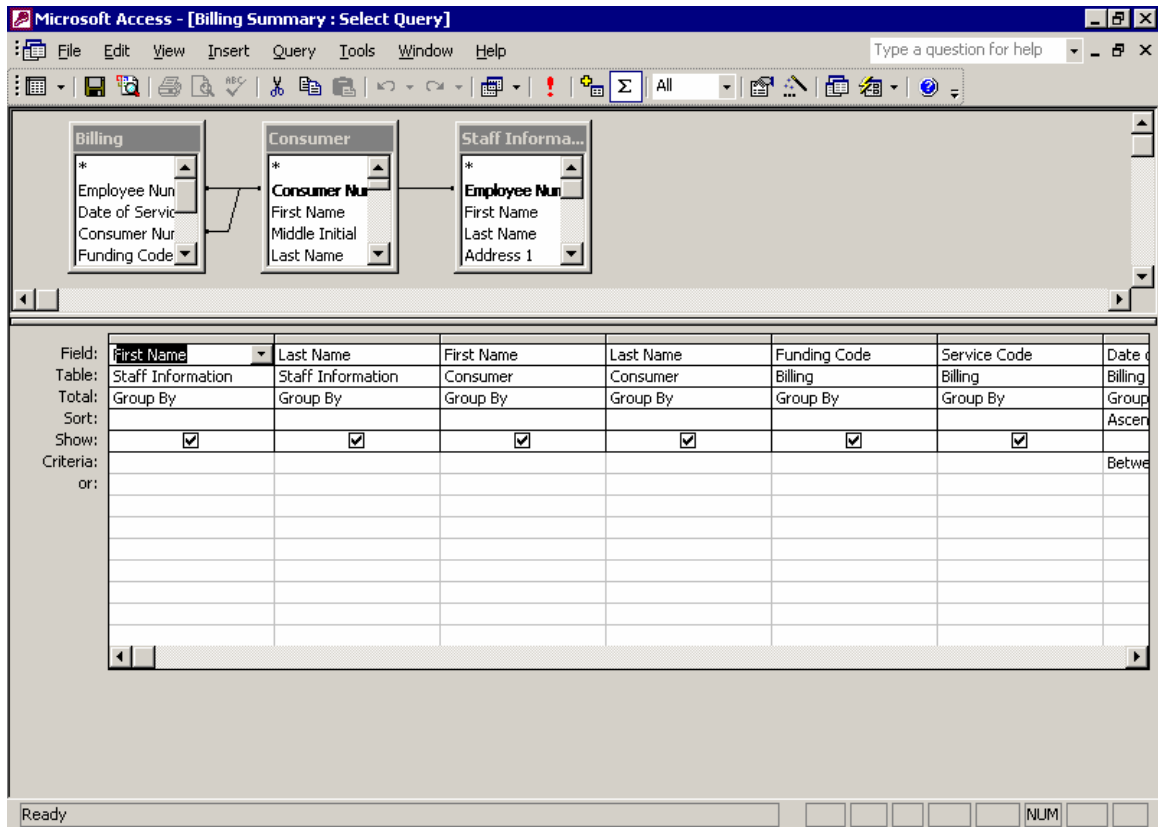


Figure A.2: Billing Summary

The diagram below shows how the required report can be generated.

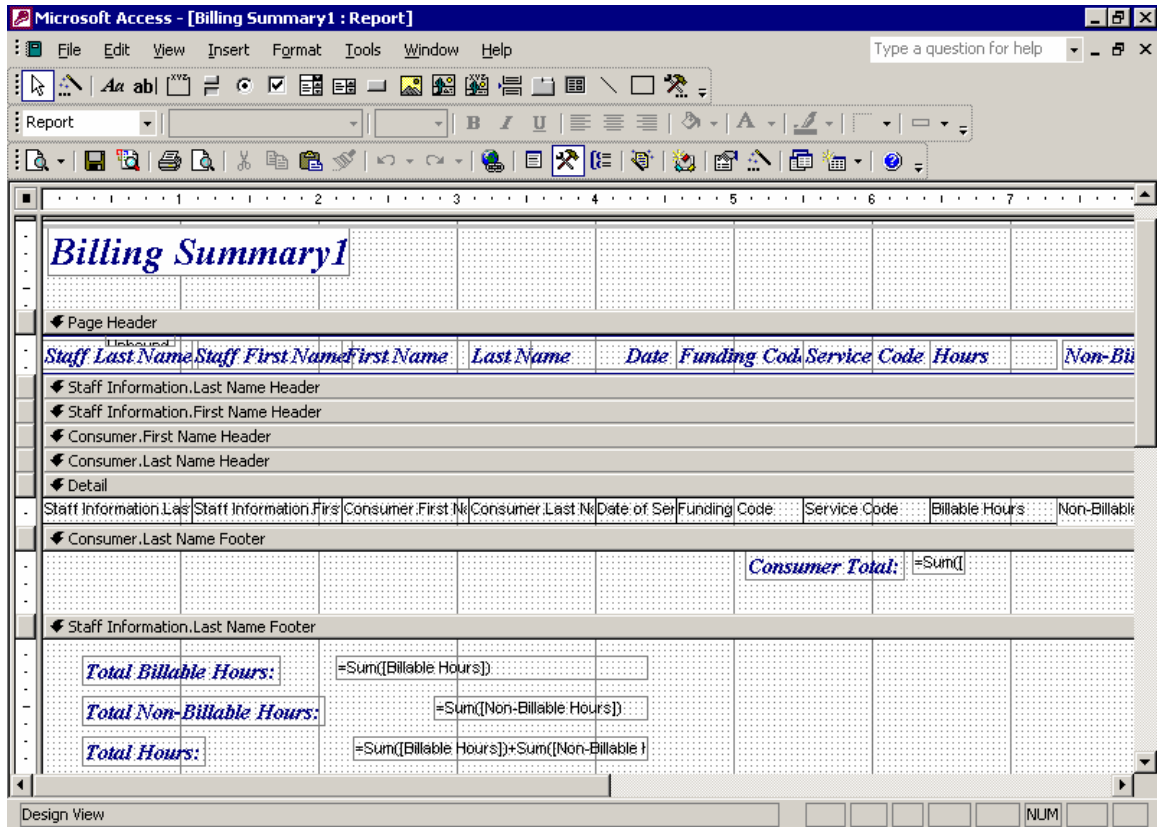


Figure A.3: Billing Report

The diagram below shows the billing table that will help generate the reports for the billing in-charge.

Employee Num	Date of Service	Consumer Num	Funding Code	Service Code	Non-Billable De	Billable Hours	Non-Billable Hc
sn6	10/25/2005	31	MR XIX	DT		4	
sn6	10/26/2005	31	MR XIX	DT		4	
sn6	10/26/2005	75	MR	DT		2	
sn6	10/27/2005	31	MR XIX	DT		4	
sn10	10/17/2005	94	OVRC	DT		1	
sn6	10/18/2005	31	MR XIX	DT		4	
sn6	10/19/2005	31	MR XIX	DT		4	
sn6	10/20/2005	31	MR XIX	DT		4	
sn5	10/28/2005	ys	Youth	DT		3	
sn10	10/24/2005	57	MR	FU/PC		.5	
sn6	10/24/2005	73	MR	FU/PC		1	
sn10	10/24/2005	56	MR	FU/PC		.25	
sn10	10/24/2005	54	PFDW	FU/PC		.25	
sn10	10/25/2005	55	MR	FU/PC		.5	
sn10	10/26/2005	55	MR	FU/PC		.25	
sn10	10/27/2005	55	MR	FU/PC		.5	
sn10	10/28/2005	50	MR	FU/PC		.25	
sn10	10/28/2005	56	MR	FU/PC		.25	
sn5	10/18/2005	30	MR	FU/PC		.5	
sn10	10/28/2005	55	MR	FU/PC		.25	
sn5	10/18/2005	32	MR	FU/PC		.25	
sn5	10/18/2005	23	MR	FU/PC		.25	
sn5	10/18/2005	28	PFDW	FU/PC		.5	
sn5	10/19/2005	33	PFDW	FU/PC		.5	
sn5	10/19/2005	27	MR	FU/PC		.5	

Figure A.4: Billing Table

Note: The client table and the consumer table have not been displayed to maintain privacy of the organization’s information.