

Hill House Community Access Network

Consultant: Sean Kim

Community Partner: Richard LeGrande

Introduction

The Hill House Community Access Network (HHCAN) assumes the responsibility as the technical center for the Hill House Association. HILLCAN's computer lab is where the community members come in to access technology such as Windows applications and the Internet. In order to serve the members with the most updated technology as possible, HILLCAN decided to upgrade the machines in the lab. HILLCAN's coordinator, Mr. LeGrande wanted to make sure he fully understands everything about upgrading lab machines in such areas as which software would benefit the community more, and which hardware is most necessary for the workshops and the various programs HILLCAN runs. Since the lab is moving to a new building in a few months, now is the most appropriate time for HILLCAN to go ahead and upgrade the outdated machines. HILLCAN also serves the role of an ISP for the community members including actual people and several local community organizations such as churches, shops, and other non-profit organizations. This role as an ISP is very costly and if not effective, would not benefit the community as the project originally intended. In order to serve the community better with faster and more reliable Internet connection, Mr. LeGrande explored several options that are described in the Opportunities section. Mr. LeGrande was also concerned about not being able to serve the community as a whole, by not providing disability-friendly facility.

This is a very crucial time for HILLCAN before the organization moves to a new building. Several decisions wait to be finalized such as purchasing the new equipment, upgrading and buying new softwares, and whether to keep the role as an ISP and if so with what kinds of services. Mr. LeGrande was a member of HILLCAN before he became the coordinator and knows very well of the operations that run in the organization. Although this is the first computer job for him and there aren't other staff who would assist him, Mr. LeGrande is very passionate and excited about the work he is doing. He is also a very fast learner. Observing that the community partner was very eager to accomplish many great things for the organization and the community, the consultant was focused in assisting him to set for the right direction and help him equip with the right tools.

Situation

Organization:

The Hill House Association is located at 1835 Centre Ave., Pittsburgh, PA 15219-4396. The Hill House Community Access Network (HILLCAN) is the part of the Hill House Association and it is located right next to the main building in the Kaufman Center. HILLCAN is responsible for the technological side of the Hill House organization. HILLCAN's main project is to provide Internet access to the community as well as anything related to computers and technologies the community demands. HILLCAN also communicates with other similar community-based organizations such as Hosanna to provide them with the informational service they need such as Internet connection. There are currently one main staff and one intern. The budget is very limited and a large part of its program is running on various kinds of donations such as computers and network related parts. The budget is basically decided project-based. For example, in order to purchase new computer systems, Mr. LeGrande needs to research for the probable choices of vendors and systems, then report it back to the main association for the approval of the board. If approved, the requested amount of budget is provided. There are three different levels in the membership status. The first is basic members are responsible for \$35 annual fee and each of them gets an email account, invitation to the various workshops (such as the workshop that teaches how to use a computer.), and access to telnet and ftp server. The supporting members contribute with \$150 annual fee and get all the basic service plus unlimited dial-up PPP access. The organizational members pay \$200 annually but the benefits are the same as the supporting members. Every member has an access to the computer lab during the open hours.

Facilities:

The main facilities are located in the basement of Kaufman Center and consist of three main rooms. The first room is the computer lab with ten computers, a scanner, and a laser printer. The computers are all connected to a hub with the Ethernet cables. The hub is then connected to an ISDN line which connects to the Internet. The security is a bit lenient since the facility is being used as a public computer lab. Each computer is not guarded by any means, which means anyone can alter the settings or wipe out the hard drive if he wishes so. Every member of HILLCAN has the access to the facility and everyone is encouraged to come in and use the computers during the open lab hours. The second room is the main office of HILLCAN that is used by Mr. LeGrande. This room is also used as the network administration place and seven ISDN modems are visibly located right above Mr. LeGrande's desk. The ISDN modems are for the incoming dial-up connections. There are also two computers in this room. One is for Mr. LeGrande and the other is for the intern who basically takes care of all the technological problems that occur in the cluster. There is a laser printer and a color inkjet printer, however, the color printer is turned off due to the financial difficulty of maintaining it. The third and the last room is used as a classroom (there are actually more vacant rooms and Mr. LeGrande mentions of them being used as more classrooms in the future). Outside the rooms, there is a lobby area where a receptionist resides.

Program:

The main program of HILLCAN is to provide Internet access to the members of the community. There are currently two ways for the members to access the Internet through HILLCAN. First, members can come into the HILLCAN computer lab to not only access the Internet but use various softwares the lab machines carry such as Adobe Photoshop, MSOffice (Word, Excel, Access and Powerpoint), and Netscape. The lab is open to public all day (10AM – 5PM) unless workshop classes are using it. The classes usually use the lab from 4PM to 6PM. Members can also purchase a dial-up account for \$35 a year to use their home PCs to dial into HILLCAN for Internet connection. (more information about the membership fee is described in the organization section.) The connection speed is in the range of 28.8 – 56Kbps and HILLCAN currently services around 400 accounts. There is also a program to provide computers to the members who do not own them. The machines are not purchased yet but the E-Machines are the most probable candidate for the moment for this project. Depending on the price of the actual systems, each member will be able to purchase a complete system that includes monitor and the modem as well as the speakers and a sound card for as low as \$500. This fee also includes a year of Internet access. HILLCAN seeks no profit whatsoever by this computer-providing program. There are also several workshop programs that are run by volunteer instructors. The workshops focus on basic computer operations such as keyboarding, word processing, how to access the Internet, etc. Members can participate in these workshops with no additional cost.

Staff:

The Coordinator of HILLCAN is Richard LeGrande. Mr. LeGrande makes most of the decisions around the facility. He has retired from his previous job but un-retired to help out HILLCAN. Due to the challenging salary and high responsibility, people were reluctant to take the Coordinator position when the position became available. Mr. LeGrande was an actual member of HILLCAN and he courageously decided to take on the responsibility of managing HILLCAN. This is the first computer related job for him but he manages to run HILLCAN very effectively, although he desires more assistance if available. The main objective of his job is to maintain and upgrade the facility and programs such that HILLCAN stays as the technological leader in the community.

Assisting Mr. LeGrande is Brandon, a high school student. Brandon is very bright and technically competent but due to his busy school life is unable to devote much time to the facility and only works as an intern. Brandon has assumed the role of network administrator and his skills match those of a professional. There are many volunteers who help out with assisting the members with computer related problems. They are knowledgeable and diligent in such areas as the basic computer operations, keyboarding and word processing.

Technical Environment:

The ten computers in the lab are Pentium 150's with 15" monitors. Windows NT is the main OS, however one machine is equipped with Linux. The network is connected to the Internet with an ISDN line through the Ethernet connections and a hub. The members connect to the Internet from their homes using dial-up networks

in Windows 95/98. There are seven ISDN modems that accept the dial-ups from the members. There are two laser printers, one scanner and one inkjet color printer, however the color printer is disconnected from the network due to the budget problem (kids came in to print out colored materials just for fun, and the cost of replacing ink became too high). Many softwares such as Adobe Photoshop, Netscape 4.6, MS Office, and WS FTP are installed on the lab machines.

Technology Mgt.:

Mr. Richard LeGrande has the responsibility of three men; for managing, maintaining, and improving the technical side of the facility including the lab, network, and the link between other community centers. Maintenance of the network seems to require more help in security. The hub for the lab machines is exposed to the public right on the lab floor, and the workstation that handles the network is right next to Mr. LeGrande's desk where anyone can come in and do what he pleases; however, this problem will be fixed when HILLCAN moves to Kay Club in the fall.

Problems & Opportunities

Observing the current situation of the organization as the consultant, there seem to be many difficulties to work on as well as very exciting opportunities. First of all, and most importantly, the organization is at a turning point where it needs to be prepared for the next five or so years. The previous director has done a great job setting up the organization to the current status; a technological center for the Hill District as well as many other nearby communities. However, technology has changed very fast and vastly since his departure. HILLCAN needs to prepare for the future with more helpful class programs, new lab machines, and tech-equipments such as teleconferencing room and wireless network. The lab is moving to a new building (Kay Club) in a few months (possibly in September 2000) so this is the perfect time for the change of equipments. There is also a great need for disability-friendly facility. With the current facility, it is very hard for the disabled bodies to come in and fully enjoy the power of computing. Providing dial-up networks to the community also needs to be either reconsidered or improved. Current email system is a bit outdated too. More graphical and user-friendly software is urgently needed so the members will not have hard time learning how to use the emails, and ultimately use emails as a part of their everyday lives.

Upgrading the lab machines and equipment:

The problem of the current machines is that they are too slow to operate. Ideally, HILLCAN would like to provide the members with the most up-to-date technology so that they can be educated for the future or for some of them, the next job; however, it is impossible for an organization to keep up with the lightning-fast change of technologies. Therefore HILLCAN sets up turning points every five years or so and it is now the time to upgrade the machines and other lab equipment for the next five year. ("five" is not a fixed number. The numbers of years can vary depending on how behind the organization might be at the time.) The new machines must be able to provide enough machine-power to be able to have classes on CISCO certificates and fast enough so the beginners would not get frustrated while trying to learn how to use computers. The new lab will begin its operation sometime after September 2000, thus the decisions that might be made currently will not be acted upon until then. This brings up another serious problem. There might be an important change of computing industry after the decisions of which machines to buy and before actually purchasing the machines. This problem must be addressed at the time of purchase and the decision of whether to stay with the decisions made now should be decided then. A proposed spec (proposed by the consultant, not decided nor discussed with the board of the organization) of the new machines is Celeron 500 with 128meg of rams, 6.4 gig of hard drive, an ethernet card, keyboard, mouse, 15-inch monitors (these can be obtained from the current machines), 16bit soundcard (speakers are optional but in the consultant's opinion headphones are preferred so other people in the lab would not be disturbed), 8meg graphics card, a 3.5inch floppy driver, 50X CD-ROM drive, and windows NT 4.0 (this is already owned by the organization and can always be replaced with the purchase of a new operating system such as Windows 2000, Linux, or other alternative OS). The current printer and scanner do not need to be replaced. The furniture of the current lab seems to address no troubles for the new lab so they can be kept with the addition of new ones depending on how many machines are purchased. (currently 12 seems to satisfy the lab but there has not been a final decision. The furniture is good for 11 including the

instructor's table) A projector and a screen are necessary to run various classes. An alternative solution for the new machines is acquiring Apple iMacs. iMacs are very easy to use and simple to set up. They are also equipped with an OS that is very user-friendly and stable. Although, current tech-world is mostly using PCs and most computer jobs are PC-based, the rise of iMac sales indicate the future potentials of Macintosh machines.

Impacts/Outcomes

With the new machines, the members will be able to prepare for schools, jobs, and certificates. High school students who are entering colleges with computer-related majors can come in and prepare for their upcoming education. Job-searchers can learn the needed applications and obtain new jobs. Since the business world (computer related) keeps up with the technology very intensely, it is imperative that job seekers train with the most updated machines and softwares as possible. And members who are studying for certificates such as CISCO or MS certificates can be ready for the exams by entering appropriate classes at HILLCAN. Members will also be more willing to come in and be familiarized with new applications and softwares since the machines will load and process them faster.

Feasibility

There are two ways to go about acquiring the new machines: actually buying them and getting donations from the big companies such as IBM, Dell, and HP. The current budget for this project runs around thirty thousand dollars (this figure is not absolute. The board is still setting up the budget). However, the budget also includes all other HILLCAN projects that are mentioned below. Considering each machine's price without monitors running around \$685.96 (now. So should be less in Sep 2000), 12 machines would sum up to \$8231.52 (this information has been obtained from www.computerbuy.com). The budget will of course depend on other projects and the board needs to decide whether to support the lab with this much money. If the first option is not available, acquiring donations from the big companies should be considered. There are various methods to do this such as sending petitions in and calling the responsible personnel. Due to the difficulty of this process (which was not investigated in detail for it was not terribly considered as the optimal solution), purchasing the machines is the preferred method of upgrading the lab. Everyone is motivated to upgrade the lab.

(The machines are available at various stores and websites such as Computerbuy, Dell, IBM, BestBuy, etc. The consultant's skill is fit enough to pick the right systems. The partner's skill is fit enough to decide which machines are best for the lab. The computers will remain after the consultant leaves. The risks are the following: acquiring ill-functioning machines, having not enough budget to purchase the machines, members tempering with the machines and possible disabling them, and members needing to learn some applications that might not run on the new machines)

Upgrading the network and dial-up service:

The new computers at the new lab need to be networked. There are two ways to do this that are being considered right now; hardwiring them with optical fibers and Ethernet connections and installing wireless networks. After the meeting with Mr. Bartel, wireless networking is becoming the most prominent choice at this time. With the wireless network, each building of HillHouse organization (there are about five of them) can all be connected to one main system. This method will eliminate the cost of installing wires under the ground and ease the job of possibly adding more building such as local churches and markets. With the computers networked together, only one main server system needs to be connected to the Internet (and the client machines will be connected to the Internet through that server) and common information can be shared such as organization database and sample documents. Maintaining the client machines would be also easier, since the system can be set up so that the administrator will be able to set up all the client machines' applications from the server.

Providing dial-up service to the community needs to be seriously considered for there are many free services on the market such as freeDSL and freeInternet. Currently the server is connected to a nonprofit Internet service provider (which the consultant has lost the name of) through seven ISDN modems. The members in the community are able to dial in to those seven modems in order to connect to the Internet. Other community

based organizations such as Hosanna, New Beginnings, and several churches are also dialing in to those modems to connect to the Internet.

There seem to be many problems with the current service such as members are having hard time trying to connect, and once connected the connection is disconnected frequently. This problem can be solved by having one stable connection such as DSL or cable modem and let the members dial in to that line.

****The issue of choosing free ISP is discussed in more detail in the appendix)**

Impacts/Outcomes

With the wireless network, members can bring in their laptops and instantly connect to the main server. This will enable them to access the resources HILLCAN builds up with various other members such as the member directory, current events, and other members that are also in the lab. The members can also participate in the various HILLCAN classes with their own laptops. When more machines are necessary for the lab, connecting them to the network would be very easy also. If there are more building that need to be connected to the HILLCAN network, no hardwiring to that building is necessary, just a new wireless antenna and several station points in the building (the station points have to be hardwired to the antenna, though) are all that are needed. (look at www.cs.cmu.edu/wireless for more information)

With the new dial-up connection, the members will be able to stay home and still enjoy fast and reliable internet connections. Providing them with DSL lines for their home PCs would be a bit costly but it is an issue to be considered. There will also be less complaints of the service, which will free up much of the administrator's time to focus on some other problems.

**** The comparison of ISDN, DSL, and Cable Modem is discussed in more detail in the appendix)**

Feasibility

The problem of improving the dial-up service is not the most urgent one to address to so there is enough time to complete the project. However, choosing the method of networking needs to be decided when the new machines are installed in the new lab. Wireless card runs around \$100, and wireless stations in each building will cost around \$150. The most costly project is to set up the server, which must be connected to a very fast and reliable ISP. This should be a T1 type of a line, but with only 12 machines in the lab and several more in other buildings a fast DSL (100 mbs possibly) will also do the job for now. The community partner is very excited about wireless technology and believes it is the way to go in the future. The required resources are readily available now but in six months, a better version of the technology is scheduled to be released. The consultant is not too familiar with setting up a network so more researches and learning is necessary. The community partner is bombarded with too much information in such short time so he will need more time to grasp the new ideas. The work is sustainable after the consultant leaves provided the network is well-installed and after-service is available, however it can not be known now for the project will start in September 2000. The risks are the cost of the operation and the speed of wireless networking. The major part of the cost is a one-time cost so it shouldn't be a problem in the long run. The speed of wireless would be a problem if there were too many computers connected to the network since the bandwidth is shared among all the computers on the network. Since there aren't too many machines to be connected to the network as of now, this is not a problem either. (The overall speed before sharing is around 100mbs.)

Organizing computer workshops and classes:

The shortage of volunteers prevents HILLCAN from organizing more workshops, therefore hiring more instructors is urgently needed to be done. Also the skill level of the instructors decide the quality level of the workshops, thus there needs to be a systematic training program for these volunteers. Proposing to local colleges for the students to come in as the instructors is one way of solving the problem. There are students who are willing to share their knowledge with those in need, and there are not too many opportunities for the students to practice their computer skills, thus this would be benefiting both the HILLCAN and the students. For those members who need to achieve CISCO and MS certificates, HILLCAN needs to hire professional instructors. This will result in more membership fee for those members.

Impacts/Outcomes

The members will enjoy the variety of the programs as well as their depth. The students will enjoy the opportunities to express their knowledge.

Feasibility

The upgrade of the lab machines will enable the instructors to fully utilize the knowledge they possess whether it is computer programming or database manipulation. There are at least five large colleges in Pittsburgh area excluding the community colleges and tech-schools. Working as an instructor for the benefit of the community is a great incentive for many students who do not possess full-time jobs yet. HILLCAN is ready to fully support the workshop programs with whatever is necessary as long as the budget allows. The risks are that students might not be as responsible as expected and some of their knowledge might not be very accurate. However, these are the same problems all instructors carry, thus should not be the reason to disregard the program. Another risk would be that the professional instructors might require a large sum of fee. This should be resolved with careful negotiation and budgeting.

There is enough time to finish this project since there are no set time to open the classes. The partner is motivated but since other projects are more urgent, this project is a bit under-considered. There aren't too many volunteers with high-tech skills and to the consultant's knowledge there are no professional instructors hired yet.

Disability Plan:

The lab has been consisted with machines that are not equipped with disability-friendly system so far. Since there exist members that are handicapped, there needs to be at least one machine with disability plan. This project will help the HILLCAN address the entire community including the disabled ones. There is a disability option in Windows system. This includes larger fonts, and more contrast in colors. There are also softwares that enable voice-activation. This enables this elimination of mouse by commanding the coordinates of mouse-pointer with voice. Wheelchair friendly furnishing is also necessary.

Impacts/Outcomes

Disabled members will be willing to come in to the lab and enjoy the facility as other members do. The instructors will also be able to assist these members better and the disabled members can acquire information to prepare for jobs and education.

Feasibility

This operation needs to be done when the new machines are installed in the new lab so there might not be enough time to complete the project. However the project can be done incrementally so not completing before the setting up of the new lab will not prevent from finishing the job. The partner is very motivated to help the needed since that is the basic mission of the organization. The required resources are not available in the organization yet, so the purchases of the softwares and hardwares need to be done. The consultant is only able to research for the softwares and equipment but will not fully understand the right capacities of them since he is not disabled himself. The partner is more informed on this subject since he has disabled friends who have appropriate systems. The project is sustainable once established. The risks are the facility not being comfortable enough for the disabled members. Since there are such few facilities with disability plan so the members will most likely hesitate to complain and the staff will have no idea if the facility is really working.

Upgrading the email software:

The current email software for the HILLCAN is Pine on unix system. Since the machines in the lab are Windows based, members have to telnet to their account and use pine there. Therefore in order to check simple email messages, members have a burden of learning how to telnet and also how to ftp in case they need to see attachments. Several options to this have been proposed such as Mulberry and Simon. With the Windows NT installed in the new machines and user accounts set up correctly, Netscape Mail and Outlook Express would also do the job. There are also Internet sites that support POP mail accounts (such as Hotmail) and this will

probably be the best option for HILLCAN. With easy email interface, members will be able to include emailing as a part of their lives as it is for so many other people around the world.

**Comparison of several email softwares are discussed in more detail in the appendix

Impacts/Outcomes

Members will easily learn how to log on to the chosen website to access their emails. After being totally comfortable with the email system, members will start sending messages to other people as if they were making phone calls. Unlike telephoning, members will also be able to send pictures and documents as attachments. The staff will also have easier time teaching members how to access their email accounts.

Feasibility

There is more than enough time to complete this project. The partner is motivated to provide the members with easier email interface. The websites and softwares are already available. (www.hotmail.com, www.mulberry.com, www.simon.com) The consultant's and the partner's skill fits the project. Once a website or a software is chosen, the email system is sustainable even after the consultant leaves. The risk is the closing of the chosen webmail site. This problem can be solved by choosing another webmail site.

Work Plan

The following table contains the basic layout of what needs to be done throughout this semester.

Date	Work
3/11	- Site Visit to Kay Club - Exchange ideas for the Families Project
3/18	- Preliminary Recommendations for equipment - 1. E-mail interface - 2. Hardware - 3. Software
3/25	- Open... Spring Break –
4/1	- Discuss about the Disability Plan
4/8	- Evaluate the Families Project
4/15	- Review numbers for ISDN, DSL, Wireless, etc
4/22	- HILLCAN Closed
4/29	- Review and Recap
5/6	- Final Recommendation for equipment changes

The following chart shows the work done by week:

Task Name		Doer: S-Sean R-Richard	March				April					May			
			4	11	18	25	1	8	15	22	29	6	13	20	27
Families Project		R													
Purchase of New Equipment															
	Visit the lab site	R, S													
	Research of hardwares	S													
	Research of softwares	S													
	Discuss options	R, S													
	Final Recommendation	S													
Disability Plan		R, S													
	Research other examples	R, S													
	Discuss options	R, S													
	Final Decisions	R													
Discuss about the Network option		R, S													
	Meet with Mr. Bartel	R, S													
	Compare ISDN, DSL, Cable Modem	R, S													
	Discuss about costs	R, S													
	Final Discussion	R, S													
Review and Recap		R, S													

Outcomes & Recommendations

Upgrading the lab machines and equipment

HILLCAN is moving to a new place (Kay Building) sometime this fall and is planning to upgrade the lab machines and softwares as well as other necessary equipment to run the classes and programs.

· Outcomes

-Although the machines are actually purchased since the moving date isn't until September 2000, the community partner now fully understands the role and the function of the lab. This understanding combined with discussed options of computers equipment will enable him to not only purchase new machines now, but upgrade the machines when they need to be upgraded.

-Currently HILLCAN plans to replace every machine in the lab with the possible exception of one machine that is used by the Coordinator.

à Evidence of possibility: budget of \$30000, the community partner's increased knowledge and understanding of when and how to upgrade the lab machines.

· Sustainability

-The knowledge and understanding of the community partner will help HILLCAN stay on the top of the constantly changing technology world.

-The new machines need to last until the next upgrade, which is not planned in next three to five years. The current plan is to buy 12 Celeron 500 machines. (not approved by the board yet).

-There is a great possibility that there will be a drastic change in the computing world in next few years. (Such as the change of OS due to the MS crisis).

-Since Intel machines are so widely used, there is no great chance that they will be obsolete in the next few years.

· Recommendation

-Instead of having a lab with the same type of machines, HILLCAN need the variety of computers such as PC-Windows, PC-Linux, and iMacs. Computers do not really have a standard. This very fact drives the organizations to choose whichever machine is right for them. This means there are computer jobs in the market that concern Non-PC knowledge. (such as UNIX-administrator, a graphic designer using Mac machine, Programmers on UNIX environment, etc.) However, most people who prepare for computer jobs do so in the scope of PC. Although the non-PC job market is not as large as the PC one, the lack of supply indicates higher possibility of getting hired for people with non-PC knowledge. Schools also use Macs and Unix system quite widely. Equipping the HILLCAN computer lab with a Linux machine and iMac would benefit people by giving them highly demanded but scarce knowledge.

· Resources

- www.Dell.com

This is the official and e-commerce site of Dell computers, Inc. The site enables a visitor to quickly assemble his desired system and get a price quote on it. This is a very good site to estimate an upper bound of price for a desired system configuration.

- www.RedHat.com

RedHat provides the most popular version of Linux with technical support. Its software is easy to install unlike the original Linux, and the environment looks strikingly similar to Windows 95/NT.

- www.Linux.org

The official site of Linux provides with most-up-to-date information of the Linux world. Since there are constant upgrades and revisions of different parts in Linux, visiting this site regularly will help a person who is in charge of maintaining a Linux system.

- www.Apple.com

The official site of all Macintosh machines provides with the most current and most accurate information about its products. This is a great starting point when performing a research on iMac.

- www.be.com

The official site of BeOS provides with in-depth information about the alternative OS to Windows 95/NT. BeOS is a very good candidate to replace Windows on PC-compatible machines. Unlike Linux, BeOS is very user-friendly and multimedia oriented.

Upgrading the network and dial-up service

HILLCAN's current network is very problematic in such areas as slow speed, frequent disconnection, and high cost (for HILLCAN not the members). It is also very difficult to add new buildings and computers where there are no wires already installed.

HILLCAN plans to wire the entire community, outside of the lab.

- **Outcomes**

- The new network system has not been installed yet, but the community partner is equipped with knowledge about the network options and feasibility of each different network system.
- With the installation of wireless network, adding new buildings will be an easier task compared to hardwiring between buildings.
- DSL lines will provide more stable and reliable services for the community members.
- Having contracts with the free ISPs will lessen the financial burden of HILLCAN.

- **Sustainability**

- The ISP for the HILLCAN network will be Information Renaissance. (www.info-ren.org) This is a non-profit organization that ensures the stability of the network flow for other non-profit organizations.
- Initial cost of the wireless could be very high.
- Once the network is set up, the maintenance cost should be fixed and not very high.
- DSL lines use existing phone lines so the existing ISDN phone lines can be used for it without the cost of phone company's separate ISDN charge.
- The development of I-Net (institutional network) in Pittsburgh area will insure the sustainability of HILLCAN network. I-Net is the collective project of many non-profit organizations in Pittsburgh area that unites the local networks with optical fiber connection.

- **Recommendation**

- Hire a network administrator. (or train one) The limitation of this is the cost of hiring a competent administrator. Even if HILLCAN trains one, there is a very good chance that he will leave the organization for a higher paying job after he acquires the knowledge. The solution of this problem is to hire part-time administrator to reduce the cost, or establishing a database with appropriate data about the network so that when a problem occurs, the coordinator will at least know where to start to fix the problem. Having a person to sign a contract before getting training from HILLCAN is also a solution. The contract would state the responsibility of the person after the training such as the mandatory amount of time to stay working as the network administrator of HILLCAN and training a successor if he wishes to leave the organization.
- Make contracts with the free ISPs such as Netzero and freeDSL.com. These companies provide free Internet connections with adequate technical support. The reason HILLCAN is unable to drop the ISP role is largely because of the head count of members using HILLCAN's dial-up accounts. This number is used by the fund raisers and donators to decide the amount of financial donation to the organization. In order to provide the community with better Internet connection and still keep those people as part of HILLCAN, the consultant

recommends contacting free ISPs and making contracts with them so that HILLCAN will still be the name of the ISP but the actual service will come from those companies listed above. The advertisements these free ISP companies force will still pop up, but the account will be named something like HILLCAN – Netzero.

Resources

- www.Netzero.com

Netzero is the leading free dial-up ISPs as of right now. The success of the company depends the number of its members. Thus, a large organization such as the Hill House Association proposes a contract to serve the community members with Netzero service, the contract would benefit the both ends.

- www.freeDsl.com

FreeDsl is a company that is run on the same concept as Netzero but with DSL lines. This company only serves selected areas but the areas they serve are expanding as the company develops. Although the service is not available in the Pittsburgh area, the consultant suspects it will come soon. Making a contract with a large organization such as the Hill House Association might be the motivation the company need to expand the service into Pittsburgh area.

Organizing computer workshops and classes

The essential purpose of the lab is to provide education for the community members. Therefore organizing more helpful workshops and classes is very urgent.

Outcomes

- Several volunteers for the class instructor positions.
- The new machines and equipment purchase is being decided for the necessary workshops and classes.
- The members of the community are very motivated to learn and improve their lives.

Sustainability

- More and more everyday, computers are becoming part of our lives.
- More jobs will require computer skills and this will motivate the members to keep attending the workshops that would help them prepare for the jobs.
- More students will choose computer-related fields to study in.
- Charging the members with class fee might be necessary in future.

Recommendation

-Nearby universities and colleges can help. (CMU, Pitt, Duquesne, etc.)

Students are surprisingly passionate of sharing their knowledge with those who do not own them. Advertising the positions of instructor at HILLCAN through each school's career center and job bulletin boards will attract students to participate in community-helping workshop programs. This experience will also increase the value of their resumes. HILLCAN can also talk to the deans of each school to set up a program where students can teach for credit (depending their performance). The workshops do not have to be a regularly scheduled ones. Students can come in and lecture for a special topic one-time workshop session.

-Get suggestions from the local companies on what they want from a potential employee. Companies require certain knowledge and skills from their employees. HILLCAN can inquire for this information and train the members with those specific technologies. HILLCAN could also set up a certificate program to inform the companies of what skills and technologies a person acquired from the training HILLCAN provided. (HILLCAN certificate A could mean the ability to wordprocess and B could mean the ability to program in Excel, etc.)

Resources

- www.verio.net, www.3rd-rock.com, www.cgi.com

These are only the examples of the local companies that need computer-trained people. They would be very happy to talk with HILLCAN and demand what they want from their potential employees.

- www.cmu.edu, www.duquesne.edu, www.pitt.edu

These are three of the local colleges with computer science major.

1. Disability Plan

In order to serve everybody in the community, HillCAN needs to equip with disability-friendly facility so that handicapped people can also enjoy the services HillCAN provide for the other members.

• Outcomes

-In order to reach disability-friendly environment the community partner and the consultant has worked out which equipment and what kind of a facility would be appropriate for disabled people.

• Sustainability

-Once the equipment and softwares are provided, base machine can be upgraded without having to worry about replacing the equipment.

• Recommendation

-Bring in a real handicapped person and ask of his opinions. Disabled people tend to be happy to see any efforts at all by the organization to address their discomforts to use a facility. They will not express complaints unless they are asked to. Asking or surveying disabled people who are the members of HILLCAN and listening to their suggestions would greatly increase the value of disability facility of HILLCAN. In other words, let the people who would be using the facility to decide how the facility would be like.

-Contact with other established disability-related organizations and ask for their suggestions. These organizations have developed their disability facility through hard work and trial-and-error. Acquiring their experiences and information will help HILLCAN avoid the same mistakes these organizations might have committed in the past.

• Resources

www.handinet.org

This site provides extensive information and links for the disabled people and disability-related organizations.

Trfn.pgh.pa.us/trcil

Three Rives Center for Independent Living is a local non-profit organization that helps individuals with disability to live independently in the community. This is a very good place actually visit and ask for information in person.

1. Upgrading the email software

Because the current email system using Pine on UNIX console is very difficult to learn for the beginners, the need to upgrade the email software has been proposed by the staff of HILLCAN. MollyMail.com has been chosen to as the primary email tool along with Pine.

MollyMail is a website where a user can type in the name of the mail server, user name and password to access his email.

Outcomes

-Graphical Email interface makes it easier for the beginners to learn how to email.

-With MollyMail, members are able to check and send emails anywhere Internet and browsers are available.

-For those members that are already familiar with telnet and Pine, MollyMail will not significantly increase their work efficiency.

Sustainability

- After learning how to use emails, email will become a part of one's life as telephones and paper mails.
- Provided there is a stable and reliable mail server (currently POP), members will be able to use any software they are most comfortable with.
- There is a risk of MollyMail.com closing the site down. If this happens beginners who are only familiar with MollyMail will have hard times handling their emails.

Recommendation

- The consultant recommends developing or purchasing HILLCAN's own webmail site. With HILLCAN webmail site, HILLCAN does not have to rely on other websites for email accesses. A website called Emumail (www.emumail.com) has a product named Alacer. Alacer enables accessing a POP mail server through website.

The following is the features of Alacer:

SMTP outbound mail, POP3 support, brandable user interface, user created folder support, MIME messages, attachments, filters, full message mailbox search, outbox, CC: BCC:, inline help, postponed messages, help system, address book, message quick jump navigational aids, reply, quoted reply, forward message, low bandwidth and graphical user interfaces, 100% Java-free, on server file storage, disk quota, user access restrictions, FastCGI/mod_perl support, Unix/Windows NT/Windows 98/Macintosh server support.

The cost of Alacer without obtaining the source code is \$425.

Resources

www.emumail.com

This site is where Alacer can be found.

www.infinitemail.com/webmail/ The same kind of a product as Alacer, but with support for more applications such as Lotus Notes.

Email Software comparison:

scale of 1 - 10 where 1 is the lowest and 10 is the highest score for the category
(10 is always better than 1)

	training	install	cost	interface	multi-user	universality	speed
Outlook Express	8	9	10	9	2	3	9
Netscape Mail	8	8	10	9	2	2	9
Mulberry	7	7	8	8	8	1	7
Simeon	6	7	8	8	8	1	7
Pine	5	3	8	6	9	6	10
Hotmail	9	10	10	9	10	10	7
Yahoo	9	10	10	8	10	10	6
AOL	9	8	6	8	10	7	6

ISP Comparison

www.zyan.com

DSL	<u>Line Speed (down/up)</u>	<u>Set up Fee</u>	<u>Monthly Fee</u>
	608K/128K	\$495	\$59.95
	1500K/384K	\$495	\$84.95

more IP address will cost more. (12 addresses will cost \$199 with 1500K speed)

ISDN	<u>Line Speed</u>	<u>Set up Fee</u>	<u>Monthly Fee</u>
	64K(1 B-channel)	\$35	\$29.95
	128K(2 B-channel)	\$45	\$49.95

with ISDN lines, phone bill is also charged. (around \$30)

Other connections such as Frame Relay, ATM, Leased line are too expensive!

www.earthlink.com

is offering a DSL line with no set-up fee.