Bloomfield-Garfield Corporation - Technology Programs

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I. The Consulting Situation

The Organization

The Bloomfield-Garfield Corporation (BGC) is a non profit organization that was founded in 1975 to advocate for the interests and needs of those who live, work or own property in the Bloomfield, Garfield and Friendship neighborhoods. The mission of the BGC is "*to better the social, economic and physical fabric of the Bloomfield, Garfield and Friendship neighborhoods by engaging and inspiring members of the community.*" In the last few decades, the Friendship and Bloomfield neighborhoods that surround Garfield, have all become economically depressed to varying degrees. The Corporation aims to help senior citizens, homebuyers, job seekers, and youth in the community with their various programs. The BGC also partners with community volunteers to support their projects or activities, and finally, they help entrepreneurs find opportunities in the area.

The BGC owns three buildings located in the heart of the Garfield neighborhood in Pittsburgh PA. The main office is located at 5149 Penn Avenue, and the Youth Development Center is a block away at 5129 Penn Avenue. These buildings house all the offices and administrative resources. The Community Activity Center is a block behind the main office at 113 North Pacific Avenue, and is used as the meeting place for all of the programs, and the occasional community meetings.

The BGC plans and facilitates other organizations or institutions, helping them bring their resources to their neighborhoods. They represent the community when they collaborate with other organizations to link senior citizens with resources; homebuyers with lenders; job seekers with employment and training; or youth and adults with computer-aided learning. Community volunteers, such as the Garfield Gators mentor program, are supported in their projects or activities so that any member of the community is enabled to help neighborhood residents enrich their lives. The BGC also looks to develop new housing in Garfield and commercial buildings along Penn Avenue. This includes renovating dwellings, restoring storefronts into new investment possibilities, and expanding existing businesses. They also publish *The Bulletin* monthly to educate readers about neighborhood events and problems.

The BGC's Executive Director is Richard Swartz, who has held the position for roughly 25 years now. Their central administration of five staff people includes the Deputy Directory, Business Development Coordinator, and Office Manager. Richard Flanagan has been the Youth Development Director for 12 years and works with two assistants and Bill Brocco who is the Technology programs Coordinator. John Niedbala is a high school student who assists Mr. Brocco and Mr. Flanagan with the Technology programs.

The Bloomfield Garfield Corperation operates on a $110,000 annual operating budget. The BGC is supported by corporate and foundation communities including Mellon Bank, and the Pittsburgh partnership for Neighborhood Development. They receive contracts from the City of Pittsburgh to implement a host of programs and projects. They also rely on elected officials to secure other local or state funds for specific initiatives. The United Way of Greater Pittsburgh helps sustain youth development efforts, as well as several local hospitals. Some of the programs generate revenues by assessing participant

fees for certain services The organization fundraises by writing proposals for grants and or sending out mailings.

Technology Situation

Main Office
The Main office uses technology mostly for clerical work. The Executive Director, Deputy Director, Business Development Coordinator and Office Manager keep track of accounting databases and write up proposals for funding.

In the main office, there are 5 computers. One of these is a PC that is only there because they could not find the accounting software they needed for a Mac. Another one of these computers is a newly bought G3 to assist the Editor in creating the bulletin. The rest of the computers are older Macs. The new G3, the PC and one of the old Macs have Ethernet cards but are not networked together. The other computers are not capable of being upgraded to use a network card. There is no clear definition or delineation with regard to managing the technical environment. Since each of the staff members has their own computer, they remain confident that their computers will not be mismanaged.

Youth Development Center
The Youth Development Center uses the computers for similar purposes. Mr. Flanagan, his two assistants, Mr. Brocco, and John work in the Youth Development Center utilizing the computers for writing letters, proposals and storing databases. Since two of the computers are online, they can also use these for finding online resources and email.

Mr. Flanagan leads the majority of the Technology initiatives at BGC. He often sees exciting ways to incorporate new technology into the youth programs and is responsible for finding the resources and funding to support it

Mr. Brocco only recently joined the BGC but has quickly taken charge of managing the details of how technology is integrated into the programs. He looks closely at the success and further demands each program experiences with technology.

John is a Peabody High School student who comes in three times a week to work closely with the Youth Development staff. He has temporarily taken over the responsibility of attending to the computer lab and fixing any technology problem that might arise in the offices. He has some experience in Cisco networking and is comfortable installing software and hardware. John usually reports any technology decisions or problems to both Mr. Brocco and Mr. Flanagan.

In the Youth Development Center there are three Pentium 133 and one operational 486 DX66 machines. They each have between 16 to 32MB of RAM, 1 to 4 GB hard drives and 15" to 17" monitors. There is one computer in Mr. Flanagan's office, another in what used to be Mr. Pisani's office, and two in the large open area where the assistants usually work. They are currently networked together to share files and connect to the Internet, however the network does not work. Only the two computers in the offices have dial-up access to their AOL accounts. Even though the Youth Development Staff are better equipped to handle technology, since the technical staff works here, they also do not have any plan to maintain the computers in their office.

Community Activity Center
The Community Activity Center has no offices, but its space is utilized to host a number of programs and meetings. The Community Activity Center is also where the computer lab is. This lab is mostly being used for youth programs. An after-school program provides elementary age school children as young as 2nd grade with a quiet place in the Community Activity Center to work on homework with the aid of staff and computer resources. Often they are prompted to spend time learning to type with the Mavis Beacon software. Magee Hospital Teen Wednesdays uses the computer lab to learn about healthy living. Similarly, the Male mentoring and job assistance programs use the computers as a way to look for job opportunities and train the youth to use applications like word so that they can build their resumes. For all programs, there is usually some time allotted for program participants to explore the computers freely. This usually entails downloading the newest songs or music videos, playing an online game, or browsing the web.

There are twelve Pentium II computers in the lab. One of these computers was more recently acquired. This computer has a 40 gig hard drive, DVD player, and 4x CD burner. The rest of the computers all originally had 8 gb hard drives, but when two of them crashed, they were replaced with 32 gb hard drives. They also all have 40x CDroms, except for the two that broke which will be replaced with 52x CDroms. The computers were all running Windows ME. The computers are lined up in an L formation along a counter. There is a high quality scanner and printer, each hooked up to one specific computer. The lab tends to be managed mostly by John, the high school technician. He is asked to go make sure the computers are operational (e.g. boots up, connects to Internet) before some youth programs get started, and is called in to assist when there are problems with the machines.

Technology Management:
Mr. Flanagan has a difficult time finding the time to deal with the computer lab issues with all the other issues he is responsible for. While he is able to hire someone, they are often not experts in the field of technology. As a result, he is unsure of how to measure their success as a Technical Director. Mr. Flanagan needs to gain further insight into the technology around him so that he can be more accurately aware of the progress the Technical director is making and judge whether they are heading in the right direction.

Computer Lab Operations & Maintenance:
The state of the computer lab is less than satisfactory for the role it needs to play in BGC's youth programs. The network is unpredictably connected and the settings for all the computers vary. A third of the computers have experienced crashed hard drives, or broken CDroms. There does not seem to be a standard protocol for the settings, and there is relatively little documentation available for understanding how the current situation came to be. John has been successful installing new hard drives and CDroms in the lab. He has tried troubleshooting some network connectivity issues, but has had minimal success.

Last year the BGC had just received these computers as part of a grant to advance technology in the community. Another consultant from Carnegie Mellon was brought in to help set them up and network them. In the time allotted, he was able to help set up a working home network between the computers that enabled them all to file share and access the Internet. Also, since the computers all have Windows ME, there is no distinction between a user and an administrator. With no security options, shortcut links have been deleted and important system files might have been tampered with unknowingly by the lab users. In some cases, hard drives have crashed as a result of misusing the computers.

At the advice of the last consultant, BGC had installed backup software that automatically creates an image file of the operating system on a bimonthly basis. This allows them to restore a computer back to its

state at a certain date, however it is unclear whether all the files were uncorrupt at that point and time. Their backup procedures have proved to be relatively unreliable.

Another contributing factor has been the high turnover rate within the organization. There have been three people in this Technology Coordinator position within the last 18 months with high turnover and the absence of documented policies and procedures, problems recur repeatedly and the environment is not stable.

Internet Connectivity:
BGC is still pursuing a wireless network initiative with Information Renaissance in which they hope will one day allow them to receive a wireless signal from the WQED tower and use it to connect all the BGC computers to one high speed network.

The Consulting Situation

Establishing documentation
Improving documentation would help create a better understand of the current situation. In the previous partnership between a Carnegie Mellon student consultant and the BGC, documentation had been a desired goal, but a number of factors including an unexpected staff change delayed documentation progress. The absence of a documented maintenance plan is one of the main contributors to the disorganization of the lab. The BGC staff has yet to realize the importance or helpfulness of documentation. Once the staff sees the benefits of documentation, they might have the motivation to create and continue creating helpful documents.

One form of helpful documentation will be to maintain a written log kept in a binder to record the current status of each computer and the items that need to be addressed. For example, Mr. Flanagan should be able to tell me which computers need CDroms and which computers were updated with the latest virus definitions within a minute of viewing the log. This can be extended to include a generic monthly maintenance plan so that Mr. Flanagan also has an established protocol.

Another beneficial document would be a feedback form so that the program teachers can somehow relate their comments and suggestions back to Mr. Flanagan. As is, there is little interaction between the program teachers and the technology administration, so it is unclear whether the programs' needs are being met.

Stable Lab Environment
Creating a stable and maintainable network in the lab is a very obvious opportunity. As a result of many people using the lab and having full access to all of the network and computer settings, the computers have different settings and different software installed on them. This causes many maintenance issues. All of these programs at BGC are in place to "better the social, economic and physical fabric by engaging and inspiring member of the community". From writing resumes, to finding homework resources, the computers need to be engaging and reliable resources

To accomplish this, we will:
- Standardize the operating system among all computers in the lab to Win2000
- Develop a backup system that could restore each computer back to a fresh-install state very quickly

- Establish user settings that maximize use but minimize risk to the system and to being exposed to objectionable materials
- Try to resolve connectivity issues so all computer lab computer can access the Internet via the current dial-up system

Fast Internet Connection
Increasing the speed of the network connection remains to be an important goal. The 13 lab computers are all connected to the internet through one 56k line. This slow network connection prevents the many programs from being able to use any online resources that are content-heavy. Many of the programs that BGC offers rely on being able to access the internet for educational and work-related purposes. One 56k modem is not meant for being split across so many computers. By using this setup, people involved in the program have to wait unreasonably long for their content to load rather than using that time to actually find 'engaging and inspiring' web resources.

Rationale
By first focusing on improving documentation, it will be far easier for Mr. Flanagan to create a stable lab environment. Running an inventory of the current technology at BGC would expand the organization's capacity by giving them a concrete view of what exactly they have and are lacking. Listing procedure for creating backups, and other necessary documentation will also create a good knowledge base for Mr. Flanagan to realize what role the Technical Director needs to play in maintaining the technology at BGC.

The secondary focus will be for Mr. Flanagan to use the documentation to take some elementary steps in establishing a more stable environment.

Lastly, puzzling out the benefits and drawbacks to both DSL and waiting for the wireless initiative will provide Mr. Flanagan with enough information to make a good decision about connectivity.

II. Outcomes and Recommendations

Outcome 1: Improving documentation
Since many of the larger decisions, such as funding, are left up to Mr. Flanagan, it is important that he is well informed of the lab's situation and needs. Mr. Flanagan has difficulty finding the time to deal with the computer lab maintenance since he is the youth director who oversees a number of other projects. This leaves a glitch in the management where Mr. Flanagan has to completely rely on another staff member for any and all information regarding the lab-related technology.

Mr. Brocco recently joined the BGC as the Technology Programs Coordinator. Mr. Brocco has been very active and surprisingly successful in recovering the previous Technical Director's footsteps. He understands the importance of organization and seeks to strengthen it where the neglect is apparent. Only two weeks from his start date, he discovered that there was little to no feedback from any of the youth programs that used the computers. He could only guess what their weekly agendas or program goals were, so he took the initiative to create a document for each of the program staff people to fill out weekly. This documentation requests a log of the activities that the participants spent their time on each meeting, and leaves space for comments, suggestions and technology notes. The program staff now has an outlet to request software they would appreciate and a way of reporting problems like a shortage of computers for the growing number of kids joining the program. This is a great step for recognizing the changing needs

for the lab so that Mr. Flanagan can easily assess the programs at a glance make decisions on how best to spend money on technology.

Mr. Brocco and John have also been very open-minded to the idea of maintaining an almost daily log of the computer lab's status. After we agreed upon the most important functions for the computers, a basic checklist with a place to note system changes was compiled. (see Appendix A) John is making a very enthusiastic effort to integrate these checks into his frequent maintenance routines.

These two documentation initiatives are giving Mr. Flanagan a clear picture of the computer lab at all times. Whenever Mr. Flanagan is interested, he can access the binder of daily reports on the current state of the computers, complete with teacher's weekly comments. While he is still reliant on both Mr. Brocco and John for some technical advice and more in-depth explanations, he spends less time getting caught up on the overall state of the lab and more time working through specific issues or developing plans to answer to the technology needs of programs.

The concrete evidence thus far has included: the production of the teacher comments & goals document and its integration into the protocol of each youth program, and the daily lab checklist document that John has recently started incorporating into his maintenance procedure. Still to be seen is the opportunity for Mr. Flanagan, Mr. Broccol, or any staff member to make use of these documents as a reliable reference.

This increased capacity will be sustained by keeping the documents current and descriptive. Mr. Brocco now expects a weekly form from the program leaders, and an almost-daily report from John about the status of the lab. Since Mr. Brocco has a strong motivation to stay organized, it is reasonable to expect he will continue enforcing these new protocols. The entire system will be challenged if Mr. Brocco or John leaves the BGC and is replaced by someone less cooperative, knowledgeable, or less organized.

Outcome 2: Stable and Secured Lab environment

BGC needed to create a stable and maintainable lab setting so that the programs can make full use of the technology when they are in session. Since the lab caters to children as young as kindergarten, the computers need to be easy to use, yet secure enough to guard against inappropriate material and modification of important system settings and files.

All of the computers now have Windows 2000 uniformly installed on the c drive, and a ghosted image stored on the d drive. John has demonstrated the ability to install Windows 2000, partition, create an image, and finally, restore the image.

User logins have been established for each of the programs, and their access has been restricted to limit their ability to install new programs and modify system files. John and Mr. Brocco independently experimented with Internet Explorer options to screen websites for adult content.

All of the computers can now get online, and inappropriate sites cannot be accessed without special permission.

Documentation reflects all of these changes and includes a completed generic monthly update calendar.

Outcome 3 , Recommendation 1: Network Speed

Increasing the speed of the network connection remains to be an important goal. All of the computer lab users have complained of the unbearably slow network connection. Some of the smaller children are more

impatient and lose interest quickly making it difficult for the teacher to carry out any internet-related activities. The slow network is attributed to the 12 computers sharing a dual modem (112kb/sec).

Although neither a DSL nor Wireless Broadband connection has been established, more concrete observations have been made to fully validate the immediate need for one. In a discussion about the computer lab, leaders of the teen's program, and the after-school program pinpointed the network speed to be an extremely limiting factor in being able to teach what they would like. I

2) Sterling Stone, leader of the teen's program often directs his students to check their email to discover the agenda and assignments for that night's meeting; however this simple process can sometimes take 10 to 15 minutes with about 8 people struggling to load the hotmail.com page. Obviously this is somewhat ironic that they take up to 15 minutes to discover what the agenda is for the remaining 45 minutes. Email should take rarely more than 3 minutes to check.
3) Michelle Taylor often tries to incorporate educational sites into her after-school program. Since these sites are made for a young audience, they are often graphics intensive and by the time they load, the children often have already lost interest. This often leaves Michelle with few computer related options other than Mavis Beacon. While typing is an important skill, math, reading, science and history are all subjects that benefit from computer-aided learning.

A Windows software update was attempted and the network could not handle the 42mb download even when only one computer was even active. This is an important factor to keeping the lab moving technologically forward. Even to find out about updates or new software, John needs to be able to research the options online quickly and effectively.

Some research has gone into the DSL service. Currently, Verizon DSL offers businesses a deal for 1.5 mb/s at 70$ per month for a full year contract. The first month is a trial month that where service can be cancelled at any time. Subsequently, the contract can be broken for a 200$ fee. The installation and modem fee are completely waived and 24/7 technical support is provided. Since the lab currently is networked with Ethernet, there would be no extra cost to buy 10baseT Ethernet cards.

The problem remains that Mr. Flanagan is hesitant to buy into a DSL package that requires a year-long commitment since the broadband initiative he has been involved with is looking closer and closer to being realized. He has considered inquiring to the Three Rivers Connect Company about possibly free DSL connectivity, but they are closely tied with the broadband initiative, so he feels uncomfortable doing so.

As quoted previously by the former CMU consultant, the cheapest DSL prices at the time was 374$/month. Verizon now has plans that make DSL far more affordable, however since they do require the one year subscription, there is a 200$ penalty. This is still a far more affordable solution than previously encountered.

Verizon Price Projection

Month	Cost of 768 kbs service ($)	Cost if cancelled ($)
1	70	0
2	70*2 = 140	140+200=340
3	70*3 = 210	210+200=410
4	70*4 = 280	280+200= 480
5	70*5 = 350	350+200 =550

This research results in both an outcome and a recommendation since no plan of action has been taken or decided upon, but a more accurate picture of the situation has been discovered. If it is decided that DSL would be a good investment given the circumstances, then someone will have to call Verizon to get an updated price quote for the various packages and specials.

Recommendation 2: Further Documentation

Source—This recommendation stems from the documentation already completed that has shown promise in adding organization and improving maintainability.
Even with the increase of feedback and logging documentation newly established, there are still important details left undocumented. In the short run, none of this is apparent, but in the long run some issues might arise that might be easily solved with more carefully organized documentation. This might include a complete inventory of all the hardware BGC owns as well as the account names/passwords, and software and version number of all the programs which might be important for updates.

Significance:
This type of documentation would prove useful in proposal writing. Proposals backed by a crystal clear assessment of their technology resources will be effective in convincing donors that the BGC is well organized and therefore utilizing all their current technology resources optimally. Some of the things BGC might seek proposals for, like software donations or hardware upgrades might need specific compatibility assessments. With a new generation of computers coming out almost yearly, it is important that BGC can identify whether software will be able to run on their systems. If BGC is looking to upgrade their hardware, like installing more cache, this requires knowing the make and model of the motherboard. Having this knowledge at their fingertips would make BGC stand out as a very professional organization. Left unattended, it would achieve the opposite by revealing BGC as an organization that does not solidly grasp exactly what assets their technology grants have provided them.

Action Items:
Collecting this information would require the cooperation and availability of John. He is knowledge about hardware, and would therefore be the most capable of compiling a detailed listing. A number of hardware components would have to be observed either by looking through the system listing in the control panel, or actually opening up the case to find the make, model, and size (if applicable). Important components:

Motherboard	Video Card	Sound Card	Hard Drive	Ethernet Card	Mouse
Keyboard	Monitor	Cache	Speakers	Printer	Hub
Modem	Scanner	cdRom	Zip drive	Floppy Disk	Fan
CPU					

Resources:
This is a great document for how the inventory form should be laid out:
http://www.ncccsf.org/teamtech/pdfs/HWInvntry_VT.PDF
Assessing the hardware situation once the hardware is well documented:
http://www.techsoup.com/worksheetpage.cfm?worksheetid=13

Recommendation 3: Building new technology programs for new audiences

Source—After observing the use of the computer labs in the current programs, it has become apparent that the computers are not the central source of enrichment.

Since many of the youth programs were established before there were computers, the main focus and goals of each program has not grown to incorporate any sort of technical focus. There is nothing wrong with these programs. However, it does leave the opportunity open for new programs to start with technology as a main focus.

Significance:
The lack of technical programs being run in the computer lab leaves the computers severely underused and under-appreciated. Since BGC has spent so much time and effort attaining these computers, they might want to show how the generous donations have not only enriched the existing programs like the after-school and teen's program, but also allowed them to attract and cater to a whole new audience within the community. A class on MSOffice, or how to build web pages would boosting the economic fabric of the Bloomfield-Garfield-Friendship area by opening new job opportunities to class participants who would be mostly young adults and adults looking to change job tracks. Many youth could be working if they had web building skills. They could even build web pages for non profits or contribute directly to BGC's new web site. Left unpursued, the BGC would lose a good opportunity for strong press and taking a large step in furthering their mission goals.

Action Items:
For quality technical education classes, a qualified staff member would have to be hired. Of course, there are certainly different levels of technical classes, so the staff member most likely does not have to be an expert. A high school or college student might be an affordable option.

Which classes to offer will need some careful consideration, and perhaps some experimentation. Perhaps a digital music class would appeal to teens in the area, or maybe that would be poorly received and a digital movie-making class would succeed as the most popular hang out after school. Perhaps to interest an older crowd, BGC might want to start a scrapbook making class that makes use of the scanner and teaches a photo-modifying software like Photoshop and eventually shows the participants how to share it online for their families to visit.

Since staffing is the largest problem when it comes to considering this recommendation, it might be helpful to consider training the current staff members. There are many resources that offer training, even specifically for non-profits.

Resources:
- Posting in the local newspapers (school and city) for volunteers/high school/college students who would be interested in teaching a class
- Looking at job sites like monster.com or flipdog.com and evaluating what kinds of elementary computer skills would be looked upon favorably
- http://www.techsoup.org/articles.cfm?topicid=9&topic=Training is a site where they list some resources for nonprofits to receive training.

APPENDIX A

BGC Daily Computer Log

_____/_____/_____

	Boots?	Access internet?	Bad sites Restricted?	Printer Networked?	CDRom Opens/ Runs/Closes?	Zip Insert/ run/eject?
1						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						

Suggestions & Comments

System Changes:

1		6		10	
3		7		11	
4		8		12	
5		9		13	

APPENDIX B

BGC Monthly Maintenance

1	2 Virus Updates	3	4 Run through Lab checklist	5
8	9 Find Software Updates	10 Make useful updates	11 Run through Lab checklist	12
15	16 Virus Updates	17	18 Run through Lab checklist	19
22	23 Meeting to evaluate Lab*	24	25 Run through Lab checklist	26

Lab Checklist:

Make requests immediately for hardware or software if anything is not in order

Virus Updates:

Allow Norton Antivirus to check and update the Virus definitions

Software Updates:

Check out Microsoft.com for software upgrades for Windows 2000

Monthly Meeting Topics:

- Community Programs that can be started to make use of the lab area
  - Can BGC afford a staff person? Knowledgeable high school/College student?
  - How is this type of program tied to the mission?
- Software that can enhance the experience in the lab
  - How will it do this?
  - How much will it cost?
  - How many people will use it?
  - Is it the best option for this type of software?
- How often are the computers actually being used?
  - Are you running out of resources? (memory, network, computers)
- Is the management of the lab sufficient?
  - Do teachers often find out about problems before the lab admin does?
  - Is the admin catching all the important problems?
  - Are there too many tasks for one part-time person to accomplish?