Mt. Ararat Community Activity Center, Inc.

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I. Situation Description of MACAC

Organization

The Mt. Ararat Community Activity Center (MACAC) is located at 271, Paulson Ave in the East End of Pittsburgh. It was founded in 1991. The annual budget is about $500,000. MACAC employs 6 full-time and 3 at part-time persons. It serves approximately 350 people annually.

MACAC focuses on the family. It wants to help people in need and at risk to become productively independent. It encourages family values, develops and administers a variety of spiritually based programs and activities. Predominantly disadvantaged minority persons, unemployed and underemployed persons and the elderly, may all participate in programs, regardless of the cost or their ability or inability to pay.

MACAC provides the following services.
- Early childhood development center (daycare center)
- Summer Day camp
- Cultural Enrichment
- Food pantry and clothing bank
- Senior luncheons
- Employment training
- After school tutorial program

They offer education classes in the following:
- Adult computer classes
- Arts and Crafts
- Science initiative
- G.E.D. and employment training
- Aerobics
- Smoking cessation
- Health awareness

Facilities

MACAC occupies the basement of a the Mt Ararat Baptist Church. The MACAC space includes a gymnasium, an auditorium, a kitchen, a childcareroom, 5 offices, and a staff lounge with coffee machines. In addition there are 3 classrooms, and two computer labs. The two computer labs have special tables for tower computers, with a tray for keyboard. There are no windows in these rooms.

Programs

There are computer classes with two different levels (basic and advanced) between 9 to 11am and 1:30 to 3:30pm, every day from Monday to Thursday. Classes start every month.

The basic program covers the main following subjects:
- Computer components: hardware & software
- Windows 98 tutorials (2 hrs)
- Word Processors (10 hrs): Write, WordPad, Word, WordPerfect and use of floppy disks.

The advanced program covers them main following subjects:

Windows Maintenance Features: cleanup (scandisk & defragment)
                                      virus software and updating
                                        drive directories / path names
                                        extensions = type of files
                                        shortcut keys & strokes

Spreadsheets / Database (Excel): basic navigation, creating a spreadsheet, creating charts.

There is no open lab session. One reason is that nobody has got enough time to watch over the users.

Staff

The staff is composed of thirteen persons. Six are full-time employees.

Rev. Mary Buckley is the executive director.
Jacquie Sledge is her assistant.
Rita Charles Farris is the instructor of the computer classes. She is also in charge of the computer maintenance.

Technical Environment

MACAC has now 31 computers. 8 IBM were donated in November and 11 computers (including a server) were purchased from Dell computers.

There are 8 computers in each computer lab, the rest in the offices.

There are two networks in this building. One is for the Church and the other for MACAC. Network outlets for the church are red and blue for the MACAC network.

From the community network point of view:
The first computer lab was wired, but the computers were not networked. The second computer lab is still not wired. All offices are now wired.

Printers:

3 HP LaserJet 4 with 10BT Ethernet card
1 HP LaserJet 2100 without Ethernet card
1 HP OfficeJet Pro 1170 Cse (inkjet, fax, xerox copie, twain) without Ethernet card
1 Epson Laser 1400 without Ethernet card
2 HP LaserJet 3p without Ethernet card
1HP Deskjet 820 without Ethernet card.

All Intel computers are running Windows 98. The Macintoshes are running MacOS 8.5.
In addition MACAC has received 8 new IBM machines in November. They are currently not used.

#	Vendor	Proc-Mhz	Ram(Mb)	HD (Gb)	Screen	LAN	Misc
1	Dell (Sever)	PIII-700	256	8	17"	100BT	CDRW & zip
8	IBM	Celeron	64	7.5	17"	100BT	CD
5	PC Clone	PI-166	32	1	17"	no	CD
3	Gateway	PII-400	128	13	17"	yes	CD
2	Gateway	PII-400	128	13	17"	yes	DVD
8	Dell	Celeron-566	128	7.5	17"	100BT	CD
2	Dell	Celeron-566	128	7.5	17"	100BT	CD-R & zip
1	Apple Quadra 7100/80	68k-80	24	0.7	15"	10BT	CD
1	eMachine	Celeron	32	4.3	15"	no	CD
1	Apple Performa 630	68k-33	20	0.25	13"	no	CD

Technology Management

As the most technically advanced staff member, Rita Charles-Farris plays the role of technology coordinator, network administrator and systems maintainer. She is also the instructor for the computer classes. Because of the two computer labs, a second instructor, or volunteer will be necessary.

II. Problems and Opportunities at MACAC

Second computer lab, Network and Server

Computer courses are organized to teach the people in need how to use a computer, and a lot of people are interested in this program, so MACAC decided to create a second computer lab. Ten new Dell computers and a server. have been purchased. Staff members use two of them, and the eight other are in the new computer lab.

Because there was no network, people used floppy disk to exchange files.

The printers were shared between two computers with a special connector. This was a problem, because people often forget to turn the switch on the right position, or they do not turn it correctly. WorkPlan

It has been decided to

> connect all the computers on the LAN
> create a "public" folder on the server where everybody can store temporary files.
> create a "staff" folder on the server, one folder and one username for each staff member. So they can store files and share them with other members. These folders are not accessible to unauthenticated users.
> connect the printers on one computer and share them on the network.

Accomplished
- With the server and the local network, the instructor is able to share example file for the courses. Before the network was set up, Rita was using floppy disk to transfer files between computers.
- The LAN allow staff members to share files and to print them from their own computer even if their computer does not have a printer. It is also used to manage the usernames and password of the staff members, so they always have the right permissions to access their files on the server.
- Sharing the printers on the network allow everyone to print from any computer, without activating a switch.
- The server runs Windows NT 4.0 Server and is configured as a primary domain controller to authenticate the users on the computers. MACAC does not have a license for this operating system, a version of Windows 2000 Server was purchased on December 7th and will replace NT 4.0. A 5 GB partition of the hard drive is shared other the network. Access restrictions applies to different folders, with an account for each staff member
- The second computer lab is not yet operational, due to time restrictions.

Internet Connection
- MACAC had got only one Internet connection, using a 56K modem. Rita was the only person that used it, and was checking e-mails for everybody (though e-mail was not widely used).
- The community wanted to include the use of Internet in its computer courses program. So they need a "high-speed" connection to the Internet, shared by all networked computers.
- There was a great opportunity to give an e-mail address to every staff member, so they can communicate more effectively with each other, and with people outside the community.

WorkPlan
It has been decided to:
- order a ADSL line from Verizon.
- install a trial version of a software router (SoftRouter from VicomSoft) on the server.
- configure all the networked machines to access the Internet through the router.
- move to hardware router once tests have been made with the software router.

Accomplished
- The ADSL line has been set up within 3 weeks from the order. It is a 640kbps download and 90kbps upload line.
- The router has been configured on the server. Tests have been made to configure it as a DHCP server, but because it is a trial version we do not currently use the DHCP protocol. DHCP will be used with the hardware router, ordered on December 7th.
- All the networked computers now have full access to the Internet.

III. Analysis of Outcomes

Network & Server

It is now easier for Rita to prepare courses when she wants to provide example files.

Staff is now able to share files, generate reports, flyers, etc. easily by reviewing older documents and making changes without leaving their desks.

Printing can take place from any computer and users can print on an inkjet or laser printer from any computer. Users no longer have to take the time to physically move to a computer where a printer is attached. Time is saved to provide better products.

Rita knows how to connect computers on a network, this includes:
- Adding a network adapter and the corresponding driver.
- Configuring the "network" control panel under Windows 95, 98 or NT4
- Sharing a printer that is connected on a computer other the network, so that other users can print on it from another computer.
- Testing the network capabilities of a computer.
- Rita did configure all the connected computers in the community, and will continue with the computers that are not already connected. She did configure the computers several times because we were testing solutions for Internet access.
- She also did configure the printers to be shared over the network, and they are used on a regular basis during the computer classes.

Currently the network is not widely used because it is a new tool, and it will take some time for everyone to share files other the network instead of using floppy or zip disks. But I am confident that as time goes, it will be widely used.

Keeping this network up is very easy. The only required configuration is the Network control panel (for Windows machines) and does not require to manually enter IP addresses because it uses a DHCP Server. (See the Internet Access section for information on the DHCP Server).

Rita is able to create an account for a new member on the server. Usage of user accounts allows a member to log on any computer and still have access to his files on the server. This is a more professional way to use and administer this type of network.

With all this knowledge, Rita is now able to maintain a network, add a new computer on the network, reconfigure a computer if a problem appears and create new accounts for members.

MACAC now owns a completely operational network. Not all the computers are connected, but this is just a question of time for Rita to configure them.

Internet Access
- All students/participants and all staff are able to access the Internet via a high-speed connection whenever they want or need to.
- Rita has already use the Internet connection in her advanced classes. So people taking these classes could have an overview of what is the Internet and how to use it. It is valuable for them because they will probably use it at work.

- The telecommunications costs are fixed, so MACAC is able to budget their telecommunications costs (at least for Internet access).
- Rita knows the concepts needed to configure a router, that means which IP address to use for the router (192.168.0.1), what is a DHCP server and what are the Domain Name Servers (DNS). With this knowledge and the user's manual of any router she would be able to configure it to suits the needs of a network like the one at MACAC.

Recommendations

Open lab sessions
While the consultant was working at MACAC, a lot of children asked him to use the computer, like in an open lab. There is a high demand for open lab session from many people coming at MACAC. So there is a great opportunity to let people accessing these computers, so they can develop computer skills, while enjoying using these machines. Of course there should be someone to supervise these sessions, but this person does not need to be a computer technician. Only some skills on how to use the programs that are installed on the machines (Word, Games...) and how to browse the Internet or how to send e-mails (using Hotmail for example) are required. You could ask high-school students to supervise these open-lab sessions. Some of them know already a lot about computer and like having a high speed connection to the Internet.

E-Mail addresses
Now that the network is connected to the Internet, you should consider teaching the use of e-mail in your classes, because people who take your classes will certainly use e-mail at work. I suggest using free e-mails like Iname (www.iname.com), Hotmail (www.hotmail.com) or any other, so they would be able to check their e-mail from any computer in the world (at home, at school, at work or in any library).

Because nowadays e-mails are widely used to communicate, it would be a good idea to provide one e-mail address for each staff member in the center. This will allow them to communicate in a better way, because e-mail is just as fast as phone calls, are written, so you can read it when you want. E-mails could be used to communicate with the family of children coming at the after-school program, as well as internal communication between staff members. The main advantage of e-mail over phone calls is that you can reach a person even if she is not in her office or at home, and you will not disturb that person if she is in a meeting.

Two solutions are possible to provide e-mail addresses to staff members:

1. If 6 addresses are sufficient, MACAC can ask its ISP (Verizon) for these addresses for free. If only a few more addresses are needed, it should be possible to purchase them from Verizon. One good idea to reduce the number of required e-mail addresses would be to split the staff members into virtual departments, and to give one e-mail address to each department. This way two to four people will share the same e-mail address, and 6 addresses would be enough.

2. If it is not possible to obtain more e-mail addresses from Verizon, and if the more are needed, MACAC should either use free e-mails like Iname or Hotmail or have its own e-mail server. While free e-mails are free of charges, the second solution is more professional, allowing MACAC to have e-mail addresses on their own domain (ex: rita@macac.com). To do so, a static IP address for the router, and an e-mail server are required. The static IP address can be purchased from the ISP. A free email server can be found

at the following address http://www.escape.ca/~avtronic/inetserv and is available for Windows 2000. MACAC has already a domain name on the Internet (macac.com).

A good compromise would be to virtually divide MACAC into 6 department and assign on e-mail address to each department (Verizon provides 6 addresses). The staff members will use Iname, Yahoo or Hotmail addresses for their personal communications.

The e-mail server option suffers from two problems. The first is the cost of the static IP address (ask Verizon for that) and the second is the maintenance of the email server. For someone that is not familiar with email servers, it could take up to 20 hours (or more if problems occur) to install and configure correctly such a server. During the first month after installation it should take about 1 hour per week to maintain, and then the time spend on this server could decrease to 1 hour per month if it is well configured.

Resources

http://www.iname.com & http://www.hotmail.com
These are two providers of free e-mails. Iname also allows the user to forward his e-mails to another e-mail address, so when the user will have a "real" e-mail address it would be able to forward the one received at Iname to his other address.
http://www.escape.ca/~avtronic/inetserv/
This is the homepage of a free email server, InetServer v3.1.1. This website is updated with newer versions of the freeware mail server and also provides documentation.

Backup System
MACAC uses a lot of computers, and they do not have any backup. Because a loss of data could slow down the activity of the community for several days, it should be important to automatically backup important data on regular basis.

The community has got a fast server, so one idea to make simple backups would be to ask every staff member to store their important data on the server, and to backup the folder that contains their data.

Two systems could be use to store the data.
1. The cheapest one would be to use this internal CD Writer of the server, with a ReWritable CD for daily backups (during the night), and standard CDs for weekly or monthly backups that would be kept outside the Center to prevent destruction by fire. Backups could be scheduled using the backup software provided with Windows 2000.
2. The professional solution consists of a tape system. This would required less work but the cost is much higher (about 800$ for a 12G DAT system from LaCie). A backup scheduler is usually provided with these products.

Resources
http://windows.microsoft.com/windows2000/en/server/help/
This is the help site about Windows 2000 Server. Especially useful would be the tabs:
   Users and computers for information on how to administer users on Windows 2000.
   Disaster Protection for information on how to perform backups with Windows 2000.
    http://www.lacie.com
   LaCie makes good backups systems, including DAT and DLT, or CDR/RW. If your amount of data to be stored becomes large, consider using a DAT or DLT backup system.

Fast recovery of a crashed computer
Computers in the labs are very often out of order, because many beginners use them. Rita will save a lot of time (about 3 hours for each broken computer), if she is able to make a disk image of a standard configuration for these computers. At this time, if a computer break down, she needs to reinstall the operating and then all the software used for the classes. This takes her about 4 hours.

A solution like Norton Ghost from Symantec (www.symantec.com) could help her making such a disk image. The inconvenience is that all the computers are not identical at MACAC (Gateway, Dell, PC Clone), with many different Ethernet adapter and video card, so she would have to make a different image for each type of computer.

The images can be stored either on CDs or on the server if the computers are able to access to network when booting from a CD of Window.

If the hard drive of the server does not have enough space on it to store many images, you should consider adding a new hard drive. Perhaps a hard drive from an old, unused computer would be enough.

Resource
http://www.symantec.com
This is the web site of the editor of Norton Ghost and Norton AntiVirus. Ghost can be used to create disk images and speed up the recovery process of a computer. AntiVirus is the currently antivirus software used in the community. Virus descriptions files are available from this web site.

Passwords
Most of the computer passwords at MACAC are very easy to guess. Now that all computers are networked, it is very easy to access files on other computers, for someone who knows the password on this computer. So I would recommend to use passwords that are not in a dictionary, with at least 6 characters and using letters and digit. It would be safe to change them as often as possible.

Organization Network & Internal Communication
The *Organization Network & Internal Communication* benchmark from the standard Technology Management Benchmarks for Nonprofit Organizations is important for MACAC, because it will enhance the content of the courses and improve the communication between the staff members. Some courses already include the Internet, but they do not include how to use e-mails. The staff members can share files and print on different printers, but they don't have e-mail addresses for fast communications.

The benchmark is mostly achieved except the last point:
• Having a computer network with a dedicated server.
• The users are authenticated using the user manager from Windows NT to prevent anyone accessing private files.
• Use a virus protection software to protect against network wide viruses.
• The staff do not have e-mail addresses.
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Resources
http://fcit.coedu.usf.edu/NETWORK/DEFAULT.HTM
This site contents a good explanation of what is a network, different kind of network, and goes through the definitions of a hub, a router, a file server, which cable to use... Although it is very complete, it doesn't teach how to configure Windows for the network. It is more about the concepts of a network.

Information on how to configure Window 98 is available on the Microsoft web-site at http://support.microsoft.com/support/windows/howto/98/default.asp and http://windows.microsoft.com/windows2000/en/server/help/ for Windows 2000 server.

External Communication
External communication is important for the community because it will help it to find grants and to communicate with people outside the center. Technical information and support are easily available on the web, or by e-mail, but it is more difficult to find information in books or to ask for support by phone. The configuration of a LAN is a good example. There exist many web pages on this subject, but finding a book that teaches you how to set up a network is more difficult.

The capacity to access the web, use Internet or any other online resources, is already achieved, except that only one e-mail address is currently used by the center.

The center has got a web site to present itself (http://www.mt-ararat.org/MACAC.html) but it is not yet a full web site, were you can find all information about MACAC. I suggest spending more time on the development of this web site. It is a very good way to present the center to other people. Very often, funders will look at this web-site to find more information on MACAC. It should content at least the history of MACAC, the activities and how to contact people at MACAC (e-mail, phone, address and fax).

The center does not yet collect and track e-mail addresses of its members, donors, or funders. E-mails are now widely used to communicate, so the center should start collecting all these addresses to communicate with its members, donors or funders. E-mails do not replace phone calls or traditional mails, but are a fast and written communication system.

Resources
Information on how to build a web site can be found at:
http://www.gomasonry.com/webmaster/teacher/