

# Citizens to Abolish Domestic Apartheid, Inc.

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## **Part I: The Consulting Situation**

### **Organization:**

Citizens to Abolish Domestic Apartheid, Inc. (CADApograms) has become a positive and progressive presence in the communities of Crestas Terrace and surrounding areas since Dr. Brooks founded the organization in 1990. Through focusing on their mission, “*CADApograms is dedicated to providing competent education, quality healthcare, environmental integrity, economic equality, and judicial equity for all persons regardless of race, creed, color, sex, or age*”, this 501(c) 3 organization has grown to include the North Versailles, East McKeesport, McKeesport, Duquesne, Braddock, North Braddock, West Mifflin, Rankin, East Pittsburgh, Wilkinsburg, and Monroeville communities in their programs and services. CADApograms has become very well connected, maintaining affiliations and partnerships with other area programs and organizations including: Nurture Clubs, Heritage Health Foundation, Greater Pittsburgh Community Food Bank, North Versailles Department of Recreation, Mon Valley Providers Council, Mon Valley Initiative, Penn State McKeesport, Community Technology Collaborative of Western Pennsylvania, Community Technology Center Network, UPMC Braddock Outreach Program, and Carnegie Mellon University. CADApograms is dedicated to the enrichment of the community, at all ages, with no limit of scope on any basis.

### **Facilities:**

CADApograms operates from two locations, across the street from each other. The technology and administrative side of the organization is based at 411 Porter Street, and shares the building with the Crestas Action. This rented space is approximately 30x40, and houses CADApograms’ computer lab, as well as desks for Dr. Brooks and Merrie Frink. The after-school program takes place about 100 yards away, in the lower level of Mt Carmel Baptist Church on the corner of Porter Street and Port Perry Road. This is the last year that the space at Mount Carmel will be available for the program.

### **Programs:**

CADApograms runs several programs at the moment, and is planning to expand to offer more as their capacity increases. Currently, the offerings include:

- The Academy, which is a tutorial and homework assistance initiative, offering support for the health of mind and body. Health awareness curricula, intense personal connection with the children, and a guaranteed hot and balanced meal every day are the core of this program. Currently, the children involved in this aspect of CADApograms’ work are split up into groups reflecting age range, and they have facilitated discussions about identity and self-esteem. As above, this program is available to children of all ages in need of such an after-school program.
- Another program is named S.A.I.L.S. (Skills in Academics Increases Life Successes). The premise of this program is a project-based computer education program, in which children develop study habits and computer skills while working on such issues as community history and ethnic diversity. The children are held to the national and state education standards for the feedback on their work.

- The Cyber Empowerment Program is a computer skills building initiative that utilizes the family dynamic to enrich the lives of the community. Sessions are structured to allow maximum growth of computer skills, family skills, and positive attitudes towards school, learning, and a good work ethic. Speakers discuss a variety of topics with the students, such as Violence Prevention. Knowledge To Empower Youths To Success Corps (KEYS) facilitated these topics. Turtle Creek Valley Mental Health also presents various topics and self esteem classes for the youth. It is currently under development.
- The Technological Entrepreneurial Corner is in place to assist older students (as the age range is rather large) in building job and career goals and skills. CADAprograms emphasizes the skills necessary in an increasingly technological job market, as well as valuable self-assessment techniques. The Visions of My Tomorrow seminar teaches technological skills as well as career exploration.
- The Intergenerational Program provides contact between senior citizens and the youth, building everyone's skills as the youth both teach and concurrently learn technology with community senior citizens. Weekly, Wednesdays are for the senior citizens to learn about computers and software, and Friday afternoons, the Intergenerational program brings together the children and the senior citizens to work together.

**Staff:**

CADAprograms is mainly run through the efforts of their energetic and enthusiastic volunteers. Dr. Brooks' current official functions for CADAprograms include Founder of CADAprograms and Treasurer for the Board of Directors. Dr. Brooks is definitely the backbone of the organization, as she maintains contacts, solicits funding, recruits volunteers, and implements the plans and strategies of the Board of Directors. The Board of Directors includes:

- A president
- Two co-vice-presidents
- A secretary
- A member-at large
- Four members who represent the community interests.

There are six regular volunteers who serve in various aspects such as tutoring, mentoring, and general assistance with CADAprograms. There are two paid employees; the dietary technician and Merrie Frink, who acts as the Cyber Empowerment Coordinator. Merrie's position concerns the Cyber Empowerment Program as described above.

**Technology Environment & Management:**

The technical environment is centered in the computer lab at 411 Porter Street, which is protected by Guardian security systems. It is a multi-purpose room at the moment, with areas for food, and desks for Dr. Brooks and Mrs. Frink, each of which has their own Dell Desktop. There are nine Dell Optiplex GX110 computers (PIII 866MHz processor with 128 MB of RAM, a 20 GB hard-drive, a floppy drive, a 48x CD-ROM drive, and external speakers), one of which Dr. Brooks uses as her administrative computer. CADAprograms also has two new Dell Optiplex GX2440 computers (P4 1.5 GHz processor, 128 MB RAM, a 20GB hard drive, a floppy drive, a DVD/CD-RW drive, and external speakers), one of which is used by Merrie Frink as her computer. Additional Equipment includes: three Hewlett Packard color scanners, five DeskJet printers, a LaserJet printer, a fax machine, and a copier for CADA's programs. Other technical property includes a recently installed Verizon DSL/modem and LAN (Linksys 1-port router, Linksys 16-port high speed Ethernet Hub), as well as two newly acquired Logitech webcams and a pair of digital cameras. There are two brand-new Palm handhelds, which came in a bundle with the two new Dell computers. The palms have not been used yet. All of the computers are

networked together and are connected to the Internet via the DSL. Right now there is no anti-virus software or network security software on the cluster computers, although there is Norton Anti-virus installed on Dr. Brooks' computer.

Dr. Brooks used her computer to publish Word documents, send and receive email, and used the Internet to look up specific web resources. Merrie Frink uses her computer in her capacity as the coordinator of the Cyber Empowerment Program. The rest of the equipment is set up for use through the programs that are currently running, and have Windows 200 installed, along with various software titles designed for the children.

Technical management at CADA is currently under the operation and management of Dr. Brooks, with the help of some of the others involved in the program, including one of the children in the after-school program who teaches the senior citizens. There was a computer consultant, but that position was recently eliminated due to the current restructuring of the lab. Dr. Brooks seeks a better understanding of the technological side of CADA's programs so that she might facilitate the lab and delegate responsibility through the organization, so that future growth is always an option. Independence is important to a non-profit organization, especially as consultants and specialists are so costly.

Future technology considerations already in motion include moving into a new facility and upgrading the lab as funding permits. The current technology situation was the realization of a technology plan previously created by the Board of Directors.

## **II. The Consulting Work**

### **Problems, Opportunities, and Focus:**

Although observation of CADApograms' operations continued throughout the partnership, there were several problems and opportunities that were made apparent early on:

- Attendance/Records— Attendance was recorded by hand, and had to be transferred into a spreadsheet for county reports and attendance records.
- Network Administration – There was a subcontractor who was responsible for the administration of the network, but following the conclusion of his employment, there was no person both responsible and prepared for the position of network administrator.
- Internet Presence – CADApograms did not have a website. CADApograms strives to have its message available to all, and the Internet was an untapped potential audience.
- Technological Familiarity – Dr. Brooks is a very involved member of CADApograms, and is in part or wholly responsible for many facets of its operations. As such, the expansion of her working knowledge of technology and related issues could only have enhanced her contributions to CADApograms, especially so given their focus on technology and education

The initial scope of work consisted of concentrations in three areas: Expanding Technological Familiarity, Network Administration, and Internet Presence. The decision to focus on these three areas, rather than to cover all four, was a function of both time constraints and the optimization of capacity expansion. By focusing on technological familiarity first, Dr. Brooks' own personal capacity was increased, as she learned more about not only technology itself, but also how to research such things independently. Following the establishment of some degree of success on this initial objective, we implemented this new knowledge acquisition by applying it first to some basic aspects of network administration, and then to the authoring and publishing of an Internet presence.

The opportunity for enhancing attendance keeping and other records issues, as well as other problems and opportunities that arose during the partnership will be discussed in greater detail in the “Additional Recommendations” section that follows.

### **Consulting Task 1: Expanding Technological Familiarity**

Dr. Brooks was generally equipped to use her computer for certain tasks. These tasks included, but were not limited to, the use of MS Word to create documents, sending and receiving email, using address books, limited spreadsheet creation, the use of the Internet to seek specific information, and the storage and maintenance of files. While these capabilities enabled Dr. Brooks to fulfill most if not all of her functions at CADAprograms, there was potential to increase her abilities to understand and use the technology that was available to her.

Part of CADAprograms’ mission is to “provide competent education”, and part of a competent education in today’s world consists of technological familiarity. In order to fulfill all of her roles effectively and more efficiently, Dr. Brooks needed to be fully comfortable and knowledgeable about the very things she strives for her students to learn. Skills that could be improved are: productive web surfing, network administration, software identification, use and learning, and web design. Furthering Dr. Brooks’ knowledge increased her ability to instruct the staff to teach the children, and thus will serve to better enhance their lives and skills set through “competent education.” Productive web surfing has enabled Dr Brooks and anyone she instructs to seek out valuable things, such as grant funding, institutions, and local events, as opposed to only using the Internet for email and specific searches. The introduction of search engines and their advanced features, as well as compiling a favorites list and recording interesting or valuable sites has increased Dr. Brooks’ available information resources.

The main components of the technical education side of CADAprograms rely on sustainable facilitation. To that end, the development of Dr. Brooks’ skills was initiated so that she, as a central figure in CADAprograms, could teach what she is learning to the staff and the participants in the organization. Dr. Brooks has an impressive ability to teach others, and this was a major consideration in going ahead with the expansion of her technological abilities. Her increased working knowledge along the lines of “learning how to learn” about software, hardware, and technology serves as a foundation to further development. Laying this foundation raises everyone’s expectations of themselves and others, introducing a positive reinforcement of the educational experience.

In order to help Dr. Brooks own the solutions, she did the majority of the actual work. While she did benefit from compiled resources and occasional hints, the overall method called for efforts on her part; thus the reward was generally all hers as well. The intended targets for skill-development included both software and hardware. The software we initially decided to work with was: Internet Explorer, MS Excel, Windows 2000, Netscape Navigator, general shareware, and MS FrontPage. The hardware portion included the dissection of an older computer and the use of both available manuals and Internet skills to learn more about the technology in the computer lab. This education was scheduled to last through the partnership; the schedule of the topics we covered is loosely represented by the above list.

### **Consulting Task 2: Network Administration**

Because of the realization of past technology goals, CADAprograms now enjoys a computer lab complete with networked computers and DSL for Internet access. Although this system allows multiple people to share the Internet, the new freedom brought new responsibilities. Network outages were troublesome and seemed random; the ability to fix such problems was only available through costly consultants. There were issues with the availability of material that Dr. Brooks and the staff found objectionable in an educational setting, and accordingly there was no way to enforce accountability for downloading or viewing such media. Dr. Brooks’ computer was the only computer with Norton Anti Virus. There was no protection from viruses or unauthorized use or computer failure for their cluster computer. The state of

knowledge did not allow for independent control of the lab, and this presented CADAprograms with both many problems and many opportunities. A safe technological environment in which to learn would further the goal of competent education. The system as it stood was diminished by the availability of contrary material. Also to do with competent education, general computer use standards and etiquette are a part of a person's functionality in today's world and economy. By educating the participants about both general computer knowledge and respect of technology, the organization would offer their participants an enhanced educational opportunity. The health and longevity of the computer lab, upon which rests much of the competent education offered, would be positively affected by the addition of a regulatory system.

Towards the goal of an effective Network Administration, we had to discuss and define the goals of the technology environment that was already in place. Once that was finished, we searched out lab policies for similar organizations, including public schools, after-school programs, and non-profit organizations involved in similar pursuits. Using these as examples, Dr. Brooks used the information to determine what key rules and guidelines she felt were most important to the formation of an acceptable lab policy.

Network Administration requires further knowledge than just a computer lab policy. In order to realize these requirements, we set out to learn about network hardware and software components. As described in the technology environment above, the network set-up for CADAprograms was fairly simple, relative to other alternative set-ups. Due to the nature of CADAprograms' network, we thought it feasible to engage in learning about the network set-up and about network troubleshooting techniques.

### **Consulting Task 3: Internet Presence**

CADA did not have an Internet presence at all. This inhibited the organization from spreading their message, and limited their ability to provide their key deliverables to "all persons." It was decided by Dr. Brooks and I that an Internet presence would help the organization be heard, and would help spread their positive message to a broad audience. Further, an Internet presence could be, in the future, tailored to improve information dissemination, such as programs, curricula, and objectives. Last but certainly not least, an Internet presence would help make CADAprograms more visible to potential funding organizations, which would help them continue to provide their deliverables.

In order to assist Dr. Brooks in owning the website, I presented her with a list of several possible website authoring ideas. These included HTML, Microsoft Word, MS FrontPage, Netscape Composer, HomeSite, and Dreamweaver. Among these choices, we agreed upon FrontPage. Due to its relatively intuitive nature, as well as its relative simplicity (as opposed to Dreamweaver), FrontPage seemed to be the best choice in order to construct a site quickly. HTML was not the first choice due to the fact that programming and structure are not strong points of Dr. Brooks' available knowledge base yet. FrontPage seemed to offer the best blend of intuitive graphical interface and simplicity. Therefore, as neither Dr. Brooks nor I had used the program before, we decided that she would help me learn the software in order to meet our goal of publishing a website for CADAprograms. Over the span of three or four weeks, we got to know this program, and designed an innovative, sample web page. This website was the goal because having a published website would raise future expectations significantly. Once it was published, it would be the Internet gateway to CADAprograms, and it could be maintained, edited, changed, and advanced by Dr. Brooks or anyone she instructs on FrontPage. On top of that ability, it stood out as an opportunity for the participants in CADAprograms to learn how to create, update, maintain and evolve a website.

## **Part III: Outcomes and Recommendations**

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### **Consulting Task 1: Expanding Technological Familiarity**

#### **Outcome: The Internet as an information resource**

Dr. Brooks now feels comfortable using most available search engines such as Yahoo, Google, AskJeeves, etc. Additionally Dr. Brooks is comfortable using the advanced search features to find more relevant results. Dr. Brooks used various search engines to find information on available grants, some which had online application materials. Dr. Brooks also used search engines to find information on which to base the planning of her organizations' field trip, including attraction availability, schedules, and contact information. She located her cousin who is a VP for United Way in Cleveland through their website. The use of the Internet as an information resource makes finding some information more efficient. Information on similar programs, grant and funding resources, and contact information can be found on the Internet. As CADAproms already has dedicated Internet access, the ability to use this access for pointed information retrieval as opposed to aimless web surfing is a validation of the initial cost of the access. The ability to effectively navigate the Internet only grows with practice. Such practice and progress can be tracked, as Dr. Brooks has done, with the use of bookmarks to manage sites that have been accessed. As Dr. Brooks has shown over and over again, she is comfortable with searching and using the Internet as a resource to find the information she is seeking. Her level of comfort indicates a high level of sustainability with respect to the ability to efficiently and usefully search and use the Internet for information.

#### **Recommendations:**

- *Pass on the knowledge to the staff.* Dr. Brooks should reinforce her knowledge of net-navigation by teaching others; both her and their capacity will be increased. As the staff and participants of CADAproms realize the flexibility and depth of the Internet, they will be empowered to further expand their knowledge base.
- *Continue Dr. Brooks' involvement in the programs.* As Dr. Brooks' responsibilities to CADAproms continue to evolve, it is in CADAproms' best interest that she maintain a hand in the educational programs, and that she remain involved as her own knowledge continues to grow. Thus benefiting her, the staff, the organization, and the people who are utilizing the organizations' programs.
- *Encourage independent research.* As a more creative idea, Dr. Brooks could hold the staff to presenting new ideas or program refinements that they find on the Internet on a weekly or monthly basis. This kind of cooperative task would reinforce everyone's skills.

#### **Resources:**

- <http://www.netskills.ac.uk/> - NetSkills' website offers Internet training courses, training materials on license, and online introductory courses. These three areas are clearly displayed as destinations on the home page.
- <http://www.rice.edu/Internet/> - A directory of Internet Navigation Tools is maintained by Rice University, and it divides the links up according to ways by which to search for content on the Internet. The best choices are highlighted and are clearly visible by the yellow "recommended" image next to them.

- <http://www.coyotecom.com/tips.html> - There are a number of documents available through this site that are designed for non-profit organizations to get the most out of their technology. Included on this page is a link to “Internet Outreach & Use for NPOs” that has a multitude of information regarding how NPO’s can use the Internet to find information and funding leads, leads on getting hardware at discounts, etc.
- [www.techsoup.com](http://www.techsoup.com) Is a site already used by Dr. Brooks for information, and has content about and links for more content on the uses of the Internet as a resource for Non-Profit organizations.
- [www.amazon.com](http://www.amazon.com) - the available search function given “non profit Internet” as the search string yields an acclaimed resource. The Nonprofit Guide to the Internet: How to Survive and Thrive, by Michael W. Johnston, is a guide based on the assumption of little or no previous knowledge. The book comes well received by many reviewers, and contains information regarding how non-profits can use the Internet for visibility, information, etc.
- [https://acis.as.cmu.edu/gale2/open/Schedule/SOCServlet?CourseNo=15129&SEMESTER=S02&Formname=Course\\_Detail](https://acis.as.cmu.edu/gale2/open/Schedule/SOCServlet?CourseNo=15129&SEMESTER=S02&Formname=Course_Detail) -Carnegie Mellon offers a course (15-129 – Searching the web and beyond) that is focused on efficient web searching. This site is a link to the details of that course.

### **Outcome: General Technological Knowledge**

Dr. Brooks now feels comfortable using the Windows file system to maintain her files in an organized manner. She has also become very proficient at email, including the use of different email clients (application based, web-based) and support programs such as WinZip to manage attachments. An example of Dr. Brooks’ increased proficiency with Windows and Internet Explorer was the use of several websites, such as Dell, Compaq, Sony, PriceWatch and others, to search for and acquire new computers that had already been budgeted for and approved by the Board of Directors. Dr. Brooks has used Excel to draw up a roster of her after-school program participants, and future projects includes complicated Excel sheet that will track the hours spent by the participants for use in county reporting, and maintains other information on them as well. Her independent work on projects using the software is an indication of her familiarity with it. Her knowledge of the computer hardware has helped her make better use of her current consultant’s time, and has enabled her to pinpoint problems on some of the computers in the lab when things go wrong that might be beyond her current knowledge. The independent applications of her new skills is an indication of sustainability, and with practice, the skills will only grow.

In addition to the specific advances in software knowledge, Dr. Brooks has demonstrated that she has expanded her aptitude to master new software packages. Her ability to pick up FrontPage was swift and is currently demonstrable, as she has updated the site and edited the content several times independently. Also showing her expanded software capacity is her research of shareware, most of which she tests in order to discern whether or not it is useful in the lab for her programs. The ability to navigate menus, FAQs, tutorials and help systems is a meta-tool for software use that only grows with practice.

Dr. Brooks has also explored the options and services of Verizon’s DSL service and all of the extras that come with membership, such as free web-space, and multiple email addresses to use for the Board of Directors. Setting up these email addresses was no small task, and required navigation of Verizon’s website that would daunt a less experienced web-surfer. Once the service is all set up to use the identified members’ privileges, Dr. Brooks will have specific email addresses working for her Board of Directors, as well as the website explained below served by Verizon.

A by-product of this general information course happened to be the Dr. Brooks has amassed a considerable vocabulary of technical jargon, including industry acronyms. This vocabulary is evidence of retaining technological information, and the fact that she uses them when describing issues and problems is further evidence that this development is sustainable. As her technological vocabulary grows, it will be evidence that she is more knowledgeable about technology, which will be an indication of her familiarity with it.

### **Recommendations:**

- *Use published benchmarks to gauge evolution and expansion against concrete criteria.* This will help to spur new growth as benchmarks change, and will help focus the organization's energies towards specific technology goals. CADAprograms currently has an established set of Minimum Computer Skills as employment criteria. These can be compared against the benchmarks mentioned above. Encouragement of participants and staff to use the correct terminology (or learn if they do not know) would effectively raise the expectations of the organization.
- *Distribute the responsibility of lab facilitation.* Dr. Brooks would be able to remain involved, while at the same time not being the only one with the knowledge and responsibility required to keep the lab running, as she has the ability to teach her involved staff much of what she has learned.
- *Pursue continuing education.* This is always an avenue through which a person can increase their knowledge. While Dr. Brooks may not at present have the time or funds to take continuing education classes, it is not beyond the organization to sponsor other staff or participants to seminars or classes. This would also, in effect, distribute the knowledge and responsibility, and it would fit in well with the organizations' goals of providing competent education.

### **Resources:**

- Due to the general nature of this consulting task, the resources available for the included recommendations are massive. General knowledge about how computers and software are used and work is available in many media, such as CD-ROM tutorials, web tutorials, books, videos, seminars, and classes. Some examples of the preceding are below, but it is to be noted that with the development of Dr. Brooks' Internet skills, she has the capacity, interest, and ability to find even more resources.
- [www.nppower.org](http://www.nppower.org) - There are published Technological Benchmarks by the National Strategy for NonProfit Technology (NSNT) which are available by request from local Npower centers.
- [http://www.cmu.edu:8001/hub/online\\_services.html](http://www.cmu.edu:8001/hub/online_services.html) - this link is to Carnegie Mellon's course offerings page, or schedule of classes for upcoming semesters. Classes of interest include Desktop Publishing and Computing Skills Workshop (CSW). CSW is a comprehensive course designed to teach students the basics of commonly used applications, and at only two units, it is a cost-effective idea for teaching staff how to use the computers that are available.
- [http://www.rmu.edu/OnTheMove/findoutmore.about\\_rmu?ipage=700](http://www.rmu.edu/OnTheMove/findoutmore.about_rmu?ipage=700) - Robert Morris University also offers courses, and has a comprehensive list of their current course offerings at this site. Some possible considerations are their A+ certification program, and their course entitled Introduction to Computer Systems.
- <http://www.utexas.edu/business/accounting/nt/> - this is a guide to Windows NT, with tutorials on various procedures for using the NT platform. This is relevant to CADAprograms because the computers all have Windows 200, an NT product.

## **Consulting Task 2: Network Administration**

### **Outcome: Lab Policy**

Dr. Brooks actively researched lab policies for multiple types of institutions; school libraries, public libraries, and public schools. Using that information, she concentrated the applicable rules and guidelines and designed a preliminary laboratory policy. Although this part of the consulting task was not completed according to the initial work-plan, it was successful in that it helped to clarify the goals of the technological education being offered by CADAprograms. Further, it opened the opportunity for more involved and detailed lab policies that will better facilitate the operation of an open, educational computer lab.

### **Recommendations:**

- *Publish the Lab Policy.* The next logical step would be to publish the policy. As Dr. Brooks has extensive experience with Word, she could easily publish preliminary copies of posters and pamphlets for the computer lab to be prominently displayed and given to each student.
- *Hold users accountable.* One way to back up CADAprograms' policies, and to introduce accountability, includes user-level password protected accounts through Windows 2000. While this could indeed get complicated, it is a good idea for the future, especially after CADAprograms makes its move to a new facility.
- *Introduce personal data storage.* CADAprograms' participants require some resources in order to comply with the policies. This includes making sure each person who uses the lab has his or her own CADAprograms specific disk storage (floppy disks or CD-RW's)
- *Have a system backup and maintenance tools ready and available.* In order to have a safe and secure network environment, there has to be some implementation of regulation, and/or accountability and the ability to repair a computer if something goes wrong. To this end, I suggest the purchase of security/recovery products, such as those offered by Norton (Symantec). The software currently offered that could benefit the lab the most include Norton Utilities Suite, Norton Anti-Virus, and Norton Ghost. The Utilities Suite enables system monitoring and diagnostics; Anti-virus protects the computers from downloading harmful files; Ghost is a system back-up product that creates a backup image of the entire system, and would enable open access computing without the risk of losing important data.

### **Resources:**

- [http://www.et.byu.edu/caedm/lab\\_policy.htm](http://www.et.byu.edu/caedm/lab_policy.htm) - a sample lab policy from Brigham Young University.
- <http://www.aurora.edu/is/labpolicy.htm> - another sample lab policy, this one from Aurora University
- [http://www.symantec.com/product/index\\_smallbiz.html](http://www.symantec.com/product/index_smallbiz.html) - Norton (Symantec) has a website with product descriptions, and support. This site offers a complete current listing of Symantec's product offerings for small businesses. By following the info link next to a product's name, you can find out more about it, and also go through the online store, which has complete online shopping, system requirements, and support.

### **Outcome: Network Troubleshooting**

This consulting task was partially fulfilled by the end of the partnership. Dr. Brooks now knows the structure of her network, and can follow the structure to try and figure out potential solutions when things go awry. This has been evidenced by her pinpointing the problem for her specialist to come in and fix

when the network went down. Although it took the specialist a little while to figure out what was wrong, Dr. Brooks had a good idea of what might be wrong before calling him in. Although Dr. Brooks now possesses a working knowledge of the network, the ability to troubleshoot all of the hardware and software involved is still a goal she is working towards. Dr. Brooks now better understands the functions and options in her System Properties and Control Panels (Internet Options, specifically), and has demonstrated this knowledge in checking how the computers were set up when the network was down. This outcome implies sustainability, but in order to be effective and lasting, the knowledge here acquired by Dr. Brooks must be supplemented and completed. While she has achieved a familiarity with the system, full troubleshooting is still an opportunity for the future.

### **Recommendations:**

- *Use existing resources to increase knowledge.* Dr. Brooks can continue to use existing resources, such as the Internet and the manuals for the components CADAprograms owns, to increase her knowledge of network troubleshooting.
- *Pursue continuing education.* Classes are also available at many area colleges, such as CMU, Carlow College, CCAC, Robert Morris, and Duquesne. Although these are relatively time-intensive, they would well serve the organization for the instruction they provide. Schedules of classes are available at each school's website.

### **Resources:**

- [www.cmu.edu](http://www.cmu.edu), [www.robert-morris.edu](http://www.robert-morris.edu), [www.carlow.edu](http://www.carlow.edu), [www.ccac.edu](http://www.ccac.edu), [www.duq.edu](http://www.duq.edu) - these are the home pages for each of the above mentioned schools. They all have search options, and entering the string "class schedule" will return the desired information.
- <http://www.linksys.com/Products/product.asp?grid=23&prid=142> – the product page for CADAprograms' Router.
- <http://www.linksys.com/Products/product.asp?grid=24&prid=42> – the product page for CADAprograms' Ethernet Hub
- <http://www.linksys.com/faqs/default.asp?fqid=16> – A preliminary introduction to network basics, such as components, their functions and uses in a network.
- <http://www.networktroubleshooting.com/servlet/ntsMain?id=Knowledge&subid=Technology+Basics> – networktroubleshooting.com offers a technology basics walk-through, with basic steps outlining troubleshooting methods and specifications. This resource is detailed, and seems to point the reader towards the company's products. The software they offer is helpful, but not, at this point, necessary for CADAprograms' network. The site also offers plenty of other resources, easily navigable from the home site at <http://www.networktroubleshooting.com>
- [http://blackbox.com/tech\\_docs/bb\\_explains/bb\\_explains.html](http://blackbox.com/tech_docs/bb_explains/bb_explains.html) - this site houses a wealth of information on many components, and features simple pull-down menus sorted by categories. The information is laid out intuitively for easy navigation, and offers easily understood explanations and definitions in pop-up windows that help you keep your place.
- <http://www.cabletesting.com/handbook.html> - this site has a detailed Adobe Acrobat document that includes most of the information in the rest of the site on cable testing and troubleshooting. It is more detailed and more advanced than the other resources, but it is a good future consideration.
- <http://www.nwfusion.com/columnists/2001/0924blass.html> - This is an article in Networking World that contains a step-by-step tutorial with plenty of annotated resources for the beginner in network administration, including precaution, recovery, and troubleshooting.

### **Consulting Task 3: Internet Presence**

#### **Outcome: Web Page**

Dr. Brooks quickly became familiar with FrontPage to author the website. Using the intuitive menus and graphical interface, along with her knowledge of Microsoft product quirks (specifically text formatting), Dr. Brooks quickly took over the project. Evidence of her capacity is mostly illustrated with her ability to author several pages independently. Dr. Brooks was the one who found the spell-check tool, which made proofing the pages much faster. As she had her own design, based on CADAprograms current brochure, she was able to lay out the web page in a way that was intuitive and easy to navigate. Dr. Brooks has shown these abilities to be sustainable, as she has edited and updated the information we put down together. She has been researching options for hosting, including the registry of a domain-name for CADAprograms, such as [www.CADAprograms.com](http://www.CADAprograms.com), which would be an improvement in recognition over their current web-space hosted by Verizon at <http://members.verizon.net/~vze2p4gc/>. This is an important action because it shows both initiative on her part as well as evidence implying her taking the work we have done to another level independently.

#### **Recommendations:**

- Research future hosting options. Dr. Brooks has already looked into alternate hosting ideas and domain-names. A positive impact of this recommendation is that better service and a more recognizable and memorable website address is a boon to increased exposure, and thus would show, though a hit-counter, the success of the website.
- Enhance the website with more advanced technology. Dr. Brooks, her staff, and her participants ought to feel free to extend, improve, and refine the web page. Possible future options include databases for publishable information such as attendance records, county reports, tech-plans, maps, legal information, and more. The exploration of other web technologies is a wide-open recommendation that has many possible paths. Active server content, scripts, motion-graphics enhancements, animated gifs, etc are possible with study and practice.
- Add links to other information. The website could be expanded further, including links to other non-profit organizations, grant and funding institutions, and other general resources. This would further the mission of providing CADAprograms' message to all, and would help interested parties in their search for information.
- Use the URL on stationary and publications. Addition of CADAprograms' URL would enhance their current stationary, such as pamphlets, brochures, business cards, and reports. Dr. Brooks could easily incorporate whatever URL they end up using in CADAprograms' available stationary, due to her experience with Word and Excel.

#### **Resources:**

- [http://www.techsoup.com/articles.cfm?topicid=13&topic=Web%20Building&cg=nav&sg=content\\_topic13](http://www.techsoup.com/articles.cfm?topicid=13&topic=Web%20Building&cg=nav&sg=content_topic13) – “Having a web presence is no longer just for organizations with specifically technical missions. A web presence is fairly easy and inexpensive to obtain, and it can be an invaluable tool. TechSoup's new Web Building section will provide you with the tools and resources to build and host a website that will highlight your nonprofit organization's mission.” This website is a gateway to a whole lot of useful information, including site development, hosting options, and continuing site development options, as well as ideas for future development.
- <http://www.adobe.com/products/photoshop/main.html> - Adobe's product page for Adobe Photoshop, an application that allows for powerful image editing. Image editing is an important part of website development, as visual appeal is a key element of the website design.

- <http://www.macromedia.com/resources/techniques/> - the authors of the Macromedia family of products (shockwave and flash multimedia authoring tools) offer some web development and design techniques, which are admittedly biased towards the company's products, but nonetheless offer good insight into future development. This resource is not designed for beginners, but detailed manuals accompany the software.
- <http://archive.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html> - NCSA is the National Center for Supercomputing Applications. They have been a valuable resource for all sorts of computing innovations through the years. This site is an introduction to HTML, which is the basic programming language for website design. While the use of graphical interface programs, such as FrontPage, eliminates the necessity of knowing HTML thoroughly, knowledge of the fundamentals can only enhance the web-development experience.
- <http://www.microsoft.com/catalog/display.asp?subid=22&site=10875> – Microsoft's product page for FrontPage 2002, their latest version. It includes a synopsis of benefits and features, and a link to order online.

## Part IV: Additional Recommendations

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### Recommendation 1: Expand Technical Management

Although Dr. Brooks has accomplished much through the partnership, she is not yet equipped to be a full-time network administrator; such knowledge comes through study and experience that requires more time than we were allotted. While a basic knowledge of the network and its components was reached, it is necessary for the sustainability of the network that there is someone on the staff whose responsibility is defined in terms of network administration.

The network is currently not very complex, and so the need for an additional employee is not as emergent as it might become when CADAprograms makes its planned move into new facilities. The important aspects of the required position include a deep enough knowledge of networking hardware and software, as well as a working knowledge of CADAprograms' network, software, and goals. Their responsibilities would include system maintenance on the software, document, and settings level, as well as hardware. Further, they would likely be in charge of handling issues such as email for the organization and web site development and maintenance in the future. This is to ensure safety and reliability for the programs that use the technology, and for the representation of the organization on the Internet. CADAprograms currently brings in specialists when problems arise. In order to be rid of this costly method, there are several options open to CADAprograms at this point, which include the following courses of action:

- *Hiring a full-time network administrator.* While perhaps the most stable, this option is not cost-effective, given the complexity and nature of CADAprograms' current computer lab and the high cost of specialists.
- *Hiring a part-time network administrator.* This option would not require the addition of a full-time employee's salary, but having someone dedicated to the CADAprograms' network would help sustain his or her usefulness, while not being over-costly. Part-time status would enable CADAprograms to hire someone with additional programmatic responsibilities.
- *Finding a volunteer network administrator.* This option is very attractive. Besides being a very low-cost option, a community member who could volunteer their expertise would enhance the community-involvement of the organization.
- *Augmenting with continuing education.* The above recommendations have the capacity be augmented by a member of the staff, possibly even Dr. Brooks, taking courses or studying and practicing network administration at the same time. This would help CADAprograms own the opportunity and the solution, as opposed to just purchasing expertise from somewhere else.

The realization of expanded technological management would be of even more value to CADAprograms as part of an overall tech-plan, as described in the next recommendation.

### **Resources:**

- Resources outlined above in the Outcomes section are of use in this recommendation as well.
- Carnegie Mellon University and other schools in the surrounding areas both run programs and have students who would be willing to lend their knowledge and time to volunteer organizations. CMU's Outreach Program (<http://outreach.mac.cc.cmu.edu/cuo/index.html>) in general and the Technology Consulting in the Community class (<http://outreach.mac.cc.cmu.edu/TCinC/default.html>) in particular are two starting points to finding interested college students and faculty.
- <http://www.nsrc.org/netadmin/netadm.html> - this is the site for the Network Startup Resource Center, which is another non-profit organization involved with developing economies and their network development. This page specifically deals with network administration topics, but most of the linked information is at a high level.
- NPower offers possible intern placement, which is a great, low-cost option. While they do not guarantee the availability of an intern immediately, they do offer support and resources in case they cannot personally help. Npower Seattle is available at 206-286-8880

### **Recommendation 2: Ongoing Technology Planning**

CADAprograms currently has a technology plan, but it is a static document that was intended for the realization of the current computer lab. As the organization plans on expanding in the future to a new community center with a potentially larger computer lab, the time is soon coming where a new technology plan will be needed. This is not to say that CADAprograms has to start from scratch. Many of the members of the Board of Directors responsible for the initial tech plan are still serving. As the consultant has learned through some study and research for the class, the organizations tech plan ought to be a "living document" in that it should act as both a record of past accomplishments and plans, as well as serving as a template for future planning. As Dr. Brooks is involved in much of the planning for the organization, and took part in the original tech plan, it is no large matter for the tech plan to be updated.

Using the Board of Directors and community members who have elected to help out with the organization, and perhaps even the participants and their parents, CADAprograms can help itself plan for the future to tailor their programs and services to the communities it serves. Further, a living tech plan enables CADAprograms to expand its own capacity as regularly as they update the tech plan, as they must research available technology options in order to plan appropriately to their funding, interests, needs, and plans. This recommendation is based on benchmarks set forth by the National Strategy for Non-Profit Technology. The introduction of a technology plan, as run by all interested participants and passed by the Board, would function to better allocate staff time in terms of technology use, and would be helpful in guiding purchases of only necessary equipment.

The steps to achieve a living technology plan are as follows:

- An organizational profile, which includes contextual details such as funding, community programs, staff, current technical environment, and the organizations' mission statement
- A vision, which incorporates future plans into the mission statement, and helps clarify and justify goals.
- A list of projects and the steps needed to achieve them
- A budget that outlines available funds, possible funds, and how the projects and intended purchases best fit the current and future operating budgets.

- A timeline that incorporates both funding and project sub-objectives. This timeline is critical for planning, as it helps allocate resources such as staff, money, and time to achieving goals in the most productive way possible.
- A schedule by which to update and annotate the tech-plan such that past accomplishments can be documented, past shortcomings can be resolved, future plans can be generated, and the interests of all involved can be satisfied to the best of the planning team's ability must be agreed upon in order to change the tech-plan from a one-time endeavor into a living document and consistent project.

### **Resources:**

Internet resources are the most quickly available information concerning the development of tech-plans. While many sites concentrate on educational tech-plans, the ideas presented can easily be applied to the non-profit sector. Below is a list of very useful websites:

- <http://projects.scrtec.org/~techplan/techplanguide.html> - "A Guide to Technology Planning" outlines the steps necessary for developing a tech-plan.
- <http://techsoup.com/articles.cfm?topicid=11&topic=Technology%20Planning> - Techsoup has technology organizational evaluation worksheet that can help in analysis of the current technology environment, as well as other guides, tools, templates, and samples that are clearly navigable from this link
- <http://www.infolink.org/edlplan.htm> - This site is a sample tech plan that could be used as a guide, template, or comparison to a new or working tech plan.
- <http://www.progressivetech.org/Resources/index.htm> - This site has links for a Technology Assessment Guide, a Technology Planning Guide, and a tool designed for use in implementing an assessment or tech plan. There is also a section of resources on funding, another on training, as well as miscellaneous resources which include general technology and web site information. The value of this site doesn't stop there, as they further have technology-specific information such as on databases, and a list of organizations and case studies that are valuable to the technology planning experience.

### **Recommendation 3: Attendance/Record Keeping**

As noted above, in the initial problems and opportunities identification, CADAPrograms currently keeps attendance by hand, filling out printed Excel spreadsheets. Attendance records could be much more efficient if CADAPrograms used technology to help with the maintenance of some sort of electronic-based record keeping. Two of the most likely of CADAPrograms' options here include:

- Using Excel directly, and entering in attendance information directly to a spreadsheet, thus saving time normally spent recopying information between written records and electronic ones. These files could be password protected for authenticity.
- Implementing a Database that would keep records of attendance, contact information, and other useful information. A Database would, in time, be more robust, but would take longer to learn than the currently implemented Excel spreadsheets.

Taking either direction, CADAprograms could more efficiently organize its data, and has the facilities to print out the information so as to back it up on paper. Technology could be used to improve the efficiency of the attendance and record-keeping aspects of the programs, and thus enable CADAprograms to expend its time resources more on the participants of their programs, instead of the clerical work. The use of Databases, while more involved, has returns in the long run, as they are more robust, and can be better used by web-developers for information dissemination. A nice feature of both Excel and Access is that their file formats are supported by each other, so in choosing one, the other is not excluded. Excel is a good choice for an intermediate step in organizing data.

CADAprograms could also consider, in the future, purchasing a laptop for their location at the Church across the street, where most of the routine attendance and records keeping actually happens. This recommendation is only really valid while the organizations programs are separated as they are, but is applicable past that point, as their myriad programs could be made more efficient by keeping records electronically. The use of a laptop lends flexibility and mobility to the task of electronic records-maintenance.

#### **Resources:**

- <http://mis.bus.sfu.ca/tutorials/MSAccess/tutorials.html> - this site has a tutorial on getting started with and learning the basics of Microsoft Access, a common database application.
- [www.pricewatch.com](http://www.pricewatch.com) – this site offers comprehensive street pricing on new equipment, such as the laptops indicated above. Easy to navigate and laid out clearly, this site offers up-to-the-minute street prices on all sorts of hardware and software.
- <http://www.developerfusion.com/show/1936/> - this site offers some tips for newcomers to database use and programming. It is an article focused for beginners.
- <http://www.microsoft.com/catalog/display.asp?subid=22&site=10864&x=24&y=5> – Microsoft's product page for Access 2002, including benefits, features, and some links for support and tutorials.
- <http://www.microsoft.com/catalog/display.asp?site=10876&subid=22&pg=1> – same as above, but for Excel 2002

#### **Recommendation 4: Standardize Lab Configurations**

Part of the problems CADAprograms' lab sometimes experiences has to do with computer configurations. As above noted in the outcomes of the network administration task, there are several options available to CADAprograms that will enable them to standardize the lab computers. Standardization of available software and configurations enhances troubleshooting by keeping the greatest number of variables constant. Once a working set-up is identified, it is a matter of records that will keep the rest of the lab up to date. This recommendation is offered as a time-saver, in that once the initial expenditures are made, there is a simple-to-update system that will contribute to the manageability of the lab. Dr. Brooks is knowledgeable enough about learning software that she could learn Norton Ghost or Roxio GoBack, two of the current system restore software options. Non-standard applications and data would require back-up under this system, but that is just an extension of the opportunities highlighted in the network administration outcomes analysis. This recommendation is immediately accessible to Dr. Brooks, and with her expanded knowledge base, she could easily teach others to contribute to facilitating this recommendation as well.

**Resources:**

- [http://www.belarc.com/free\\_download.html](http://www.belarc.com/free_download.html) - A quick and easy way of categorizing and cataloging software and hardware configurations is available by Belarc. This site is a link to a free download of their Advisor Tool, which is one of many available diagnostic applications. And it's free!
- <http://www.microsoft.com/windows2000/> - Microsoft's complete guide to Windows 2000, including all of the control panels and tutorials for different functions of Windows 2000. These specifications, FAQs and tutorials offer a guide by which to make sure everything is set up correctly for Windows 2000 to be useful.
- <http://www.roxio.com/en/products/goback/index.jhtml> - Roxio's product page on GoBack.
- The product page to Norton Ghost is supplied in the network administration outcomes above.

**About the Consultant:**

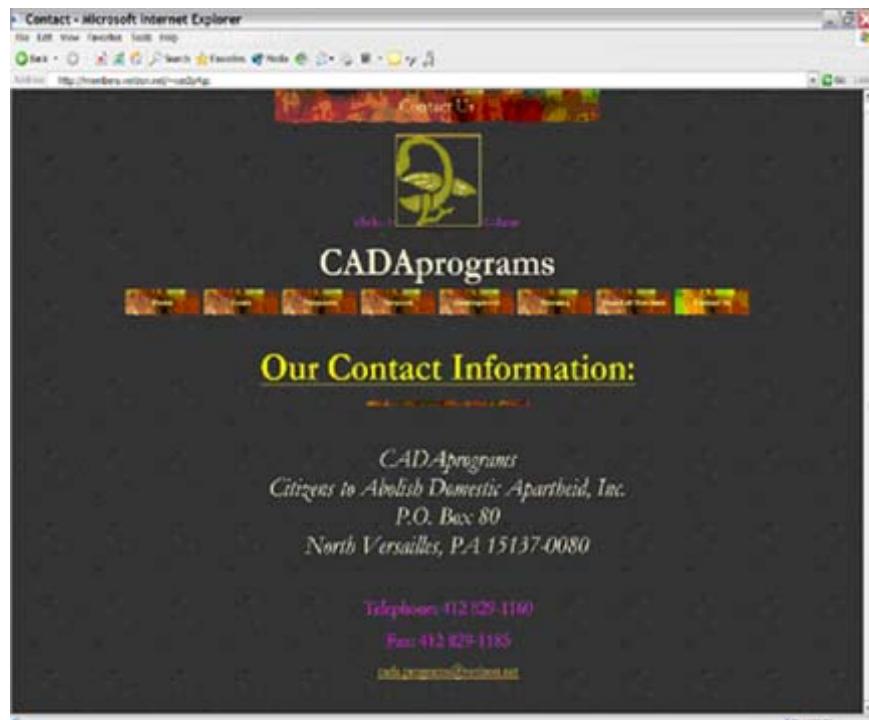
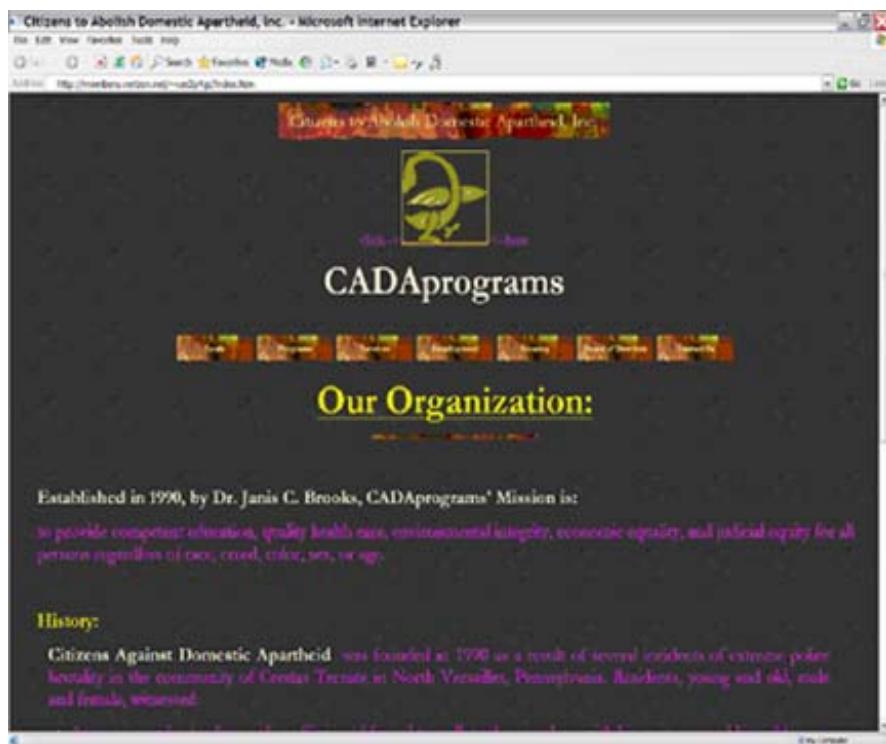
Justin Sean Kenlon is a senior in the Philosophy Department in the College of Humanities & Social Sciences at Carnegie Mellon University. He will be graduating in August with a B.S. in Ethics, History, & Public Policy. Future plans include application to the Human Computer Interaction Institute at Carnegie Mellon for Masters studies, and a career in technology policy, hopefully in Washington, DC. Other areas of interest include assisting developing nations and economies through mediated policy and technology introduction, as well as reconciling world religions and cultures with the advancement of technology.

## Appendix A.1

### The Web Site

#### Home Page:

The Home Page is (usually) the first page that greets visitors to the site. The home page has links to all of the other pages in the site, and its style is representative of the rest of the website. The theme was predefined in FrontPage, and was chosen as it reflects an ethnic appeal. The font was formatted for size and color to emphasize certain points. The information on the Home Page includes CADAprograms' mission statement and a brief history of the organization.



#### Contact Page:

The contact Page is clearly found by the button marked "Contact". Here CADA programs published all of their contact information, including their new email address at Verizon.net. When the page was initially drafted, the address was of the actual facility, and the email address was for CADAprograms' email provider at that time. Dr. Brooks was able to update the information before the site was published, so that the location of the facility would remain protected, and to represent their preferred email address.

## **Appendix A.2**

### **CADApograms' Symbol:**

The Sankofa Bird is a common element in all of CADApograms' stationary. From letterhead to brochures, and now to the website, the Sankofa Bird makes its appearance. It is a symbol of African culture, whose message is akin to that of CADApograms: to remember the past while building the future.

