Community Technical Assistance Center – Context Analysis
Student Consultant, Jonathan Navia
Community Partner, Alida Baker

Part I. The Consulting Situation
ABOUT THE ORGANIZATION

Organization
The Community Technical Assistance Center (CTAC) is a Pittsburgh based non-profit organization that provides a range of services including workshops, consulting, referrals and publications, for the purpose of supporting other community-based organizations and non-profits, and by extension building stronger communities.

CTAC's mission statement is:

CTAC is committed to building and strengthening effective community-based organizations through training, individualized consulting services, referrals and publicans. As a non-profit corporation, our goal is to develop strong communities by providing technical assistance to neighborhood groups, tenants, councils, merchants associations and community development corporations in South Western Pennsylvania.

CTAC was incorporated in 1982 and since then has expanded its initial program offerings to include workshops, consulting, publications and community improvement projects towards these goals. CTAC, having been around for nearly 23 years has several well established sources of funding. CTAC has an annual budget of $400,000 a year, most of it from grant programs, banks and donors. CTAC has a good relationship with local area Banks. Its money is managed by a 16 member Board of Directors, chaired by CTAC Board president Joey-Linn Ulrich. CTAC accepts donations from the United Way of Allegheny County (Code 120) and JustGive.org. All donations are tax deductible.

Facilities
CTAC is located at 901 Western Avenue, near Heinz Field in Pittsburgh in the North Side area. The facilities are on the first and second floor of a building that houses several other companies and organizations. The ground floor is comprised of a conference room where workshops are held. It is physically separate from the rest of the office, meaning that the staff must walk outside and up a flight of stairs and get inside to enter the main office. This training room area is 500 square feet. The main office area is a spacious 2045 square feet and is comprised of 7 rooms, including 4 dedicated offices and three general purpose rooms, one of which doubles as a relatively non-private office, and another of which is the reception area. Each of the five staff members have their own dedicated office or work area, meaning that some areas of the facility are relatively unoccupied on a regular basis.

Programs
The Community Technical Assistance Center offers a wide range of programs that include consulting services, workshops, publications, and community improvement projects. All programs have computer related elements to them. The following is only some of the extensive services CTAC offers.

1. Workshops: CTAC offers a variety of classes for the purpose of building better community organizations and improving the skills necessary to operate existing ones more effectively. CTAC works with other organizations in developing these workshops. It lists among its partners the National Development Council, The National Main Streets Center and the Grantsmanship Center of Pittsburgh. CTAC staff members of course bring their own extensive experience. The principle workshop offering is the "Core Series" which CTAC describes as "the most successful and longest running organizational development series in Western Pennsylvania" This series of 8 workshops includes Leadership Skills, Structure and Bylaws, Effective Meetings, Fundraising and Strategic Planning.

2. Publications: CTAC produces workshop-based Handbooks, development kits and other resources for non-profit community organizations that are based around the core mission of the organization to better communities by bettering the organizations which service them. Examples of publications include the Core Series Handbooks, Do It Right! Kits, Leadership Skills and Financial Management.

3. Consulting services: The CTAC staff have extensive experience they are willing to share and offer a wide range of consulting services – from submitting questions on the website or a phone call, to a multi-year planning process. Most of these are free and all are tailored towards the group seeking help.

4. Community Improvement Projects: While the other 3 are for the purpose of building better communities through building better community organizations, CTAC also does some direct community improvement projects. While CTAC originally offered such services as financial management and reports for many non-profits, now one of their principle projects is the land parcel data collection project.

Staff

CTAC has a full time staff of five employees and an extended board of directors of 16 individuals, most of whom are located in the Pittsburgh area. The Executive Director is Mark Fatla who is charged with executing strategic plans and policies as established by the board of directors, including writing a budget, managing high-level relations with clients and planning. Alida Baker, Marjorie Howard and Shelley Harnett are Community Development Specialist, responsible for consulting, workshops and publications – most of what CTAC offers. While all three provide direct services to nonprofit organizations, the responsibilities of the Community Development Specialists slightly differ. Ms. Howard focuses more on teaching workshops than her co-workers. Ms. Harnett is responsible for the land parcel inventory project. Mrs. Baker focuses more on proposal writing and administration. Diane Smith is the office and program coordinator: her job is to organize records, contracts and publications and workshop logistics.

All employees have a personal computer that is connected to a shared DSL network for high speed internet access, an email account, and are familiar with most of the commonly used programs available to Windows users (Microsoft Word, Excel, Internet Explorer, Outlook). Each personal computer has access to a database containing a complete organized list of CTAC contacts and clients, from individuals to Allegheny county offices. The Community Development Specialists each use their own set of programs that are attuned to their specific role in the organization. For instance, Shelley Hartnett has experience with Microsoft Access and Handibase databases, while Alida Baker has ArcView and GIS software installed on her computer.

Computer literacy has never been a problem with the staff. They describe themselves as "eager learners" and have gained experience by adopting programs and learning about how to use them effectively on the job. A previous CTC student described them as "fearless users". Formal training is minimal and most technology related problems are solved by a third party they contract in to maintain their network. The staff has better-than-rudimentary computer skills, capable of organizing and using a database on their own and juggling data between PDAs and desktops. While they have experience at working with what they have and are adept at managing it, the technical side of the process, for instance designing and implementing the LAN they use, was left to a consultant.

Technical Environment

CTAC maintains 6 primary computers, all between the ages of 1 and 3 years old. There is one computer in each staff office and two others at tables. Computers are manufactured by either Dell or Gateway. The computers in each of the staff offices are largely personalized to their own needs and used by solely the individual whose office they are located. The two relevant computers are Mrs. Baker's desktop, which is counted as a primary computer and is one of the newer machines, and the front desk computer, which is not used regularly by any one person and is typically not manned. The specifications for Mrs. Baker's computer are as follows:

- Manufacturer: Dell, eMachines (monitor)
- Processor: Intel Pentium 4
- Memory: 256 MB of DDR333 RAM
- Hard Drive: 37.2 GB Serial ATA, 7200 RPM Hard Drive
- Operating System: Windows XP Service Pack 2
- CD-ROM and Floppy Drives
- Speakers, 17 inch CRT Monitor
- Printer
- Connection wire to Palm Pilot

The specifications for the front desk computer are:

- Manufacturer: Gateway
- Processor: Intel Pentium II MMX
- Memory: 64 MB of SDRAM
- Hard Drive: 12 GB Serial ATA Hard Drive
- Operating System: Windows 2000
- CD-ROM and Floppy Drives
- Speakers, 17 inch CRT Monitor
- Shared Office Printer

Every computer has installed on it a version of Microsoft Office Standard, Microsoft Access, Internet Explorer 6.02 and the CTAC database. Additionally, specific computers have specialized programs suited for a particular users needs. Most notably, Alida Baker's PC has ArcView by the Environmental Systems Research Institute (ESRI) and Shelley Hartnett has Microsoft Access and HandiBase. Some other programs in use include Microsoft PowerPoint, Dreamweaver, an FTP program, and Palm Desktop.

CTAC most notably has an inventory of 2 Palm zires, 2 Palm tungsten e, 3 Palm 105s, and 6 Palm m130s. These Palms are loaded with the standard suite of PalmOS Software, but CTAC has additionally installed the Palm version of the HanDBase form that contains specific "drop-down" list information for

evaluating parcels of land. These Palms are owned by CTAC and are loaned to Workshop trainees who are dispatched on parcel evaluation assignments. As pieces of technology that have passed through many hands, they show a respectable amount of wear and tear.

Technology Management

Technology management at CTAC is divided between Alida Baker, Shelley Hartnett and consultant John Boles. Mrs. Baker and Ms. Harnett are the primary in-house computer managers and use the database, internet, office, map and Palm tools extensively. If there is a minor computer issue or a new piece of software is installed, it is Mrs. Baker and Ms. Hartnett that are de facto responsible for figuring out how it works. Mrs. Baker's son is a computer science student who built the contact database front-end for CTAC and updates its capabilities periodically. If there is a larger, more difficult computer issue whose solution is beyond the in-house capabilities of CTAC, consultant John Boles is called in to correct the problem or provide a solution. He built and regularly maintains the network by visiting on site on a weekly basis. The many databases that CTAC has, the contact and parcel information databases being only a part of it, are backed up by the computer every Friday. CTAC is investigating online backup.

Technology Planning

Computer needs are handled by Alida Baker and Shelley Harnett. All requests must be written into annual budget by Executive Director Mark T. Fatla that then must be approved by the Board of Directors. The FY 2005 budget was $400,000 with $2000 dedicated towards technology spending; however, CTAC also received this year a $20,000 grant to buy equipment, supplies and training for the inventory project. CTAC possess an informal technology plan that they try to stick to. Typically, computer life cycle is roughly 3 years. Every year, they write into the budget enough money with which they can purchase 2 new computers and use it to replace 2 older models. There is a usage-based pecking order that finds Mrs. Baker, needing the more powerful machines to do the ArcView related graphics with, receiving the newer computers while she hands her old PC to another staff member.

The network that connects all the computers was built by consultant John Boles in 2002. CTAC is interested in setting up a dedicated printer server (rather than print to Shelley's computer) and transitioning towards a WiFi wireless network.

The Palm Pilots used in Parcel data collection have been used by many individuals and are showing signs of wear and tear. CTAC is exploring possibilities of phasing them out over the next 6 to 8 months and purchasing new PDAs. CTAC currently has several thousand dollar allocated from the budget and $20,000 from a grant, available for this end.

Internal & External Communications

CTAC's website is located at http://www.ctaconline.org. The site is very complete and offers a very deep glimpse into the full spectrum of what CTAC offers its clients. It is updated regularly, is well designed and maintained in an organized fashion. It has the following sections:

- Office (staff, mission statement and contact information)
- School (CTAC workshop information)
- Library (downloadable Resource kits, handbooks for free/sale, designed for non-profits)
- Bookstore (Book review, CTAC Handbooks for sale, links to Barnes & Nobles)
- Clinic (submission form to ask questions about nearly anything non-profit related)
- Bulletin board (frequently updated, contains community e-report, workshop information and "Ask the Non-Profit Goddess")

- Phone booth (links to communicate with organizations and funders for non-profits)

Website was designed by Mullen 2 years ago. It is maintained principally by Alida Baker, although CTAC recently contracted Mullen to begin updating it for $2000. The website, telephone, pamphlets, flyers newsletters and mailings are the principle means by which CTAC communicates with prospective clients and the community. CTAC produces a wide range of informative pamphlets that advertise in detail the wide range of services the corporation offers, from consulting to workshops to publications.

CTAC's internal network is set up to have file and printer sharing. Most heavily utilized is a shared database of all of CTAC's contact information, from individuals to organizations. Access to this database is available on every networked computer. Every computer has access to the internet via a shared DSL connection and has printer sharing rights. CTAC is small enough with only five staff members that any internal communication can typically be handled via face to face conversation, but if necessary, every staff member has an email address that they check and there is a bulletin board and mail boxes where notes and information can be placed. The network has a firewall that acts as the primary layer of security between the sensitive internal network and the website.

Information Management

No one person is responsible for Information Management. The client database that is shared throughout all computers in the office has data entered into it by every staff member. Alida Baker manages the website. Diane Smith manages the hard-copy publications, proposals, contracts, and other organizational records. Electronic Information is handled principally by the email and the shared client database. The client database is in semi-spreadsheet format and includes name, contact information and CTAC's relationship with essentially everyone the organization deals with. The front end to this was developed by Mrs. Baker's son. There are many Databases for managing the other projects CTAC runs. Most notably for the purposes of this project are the many Land Parcel databases. These databases, built with Handibase and Microsoft Access contain the collected information from the PDAs, ArcView Maps, photos and contact information. They are maintained by Shelley Hartnett.

Part II. Consulting Tasks

Consulting Task I: Revised Parcel Data Collection and Management Plan

Description

One of CTAC's main projects is collection and organization of land parcel information. CTAC trainees are trained in how to collect specific information about a property's value and are loaned Palm PDAs (models: 2 Palm zires, 2 Palm tungsten e, 3 Palm 105s, 6 Palm m130s). They are sent to the survey site and with a combination of a paper map and a Handibase form on the Palm Pilot, they evaluate the parcel. They take into consideration such things as ownership, value, use, size, proximity to roads and other forms of transportation. The data input is of two forms: manual input (for instance a number) or selection of an item from a drop down list. This process requires substantial juggling of use of a paper map and the PDA for the surveyor to find out precisely where he is on the property so he can most effectively evaluate it. When survey is complete, the data on the Palm PDA is brought back to CTAC where it is synced with a desktop computer. The data is then exported manually into dBASE format using Handibase Desktop. A script is run on it to convert remove the zeroes in its lot information. These zeroes are present in the accounting number (and act kind of like a mask), but not in the database format. The Database file is then manually imported into Microsoft Access where it is organized with the rest of the information about the

lot (including ArcView GIS maps and photos). Information about each lot is stored in their own unique database on Shelley Harnett's computer. The aforementioned ArcView GIS maps are edited separately on Alida Baker's computer, and the developer of ArcView and ArcGIS, Environmental Systems Research Institute, Inc. (ESRI) do not support PalmOS, just PocketPC. All this data, divided across two computers, the entire collection of PDAs and paper maps must be organized and converted to make a complete database that describes the parcel in its entirety. While this convoluted process of collection and conversion is effective and does do its job despite its complexity and consummation of time, the $20,000 grant that CTAC has available for this project has presented the organization with the opportunity to upgrade their collection capabilities, and at the same time, reorganize the collection process to be more efficient, user friendly, less time consuming and include data that currently is excluded. Several programs, one in particular named ArcPad is PocketPC compatible and is the sister program to ArcView and ArcGIS, have the capability of possibly removing both the paper map and Handibase from the collection and conversion scheme entirely.

The consulting task is to assist Alida Baker with evaluating new avenues and opportunities in PDA data collection by assessing the current state of CTAC's collection capabilities and comparing it to the proposed expansion of capabilities that will become available by modernizing the PDA inventory. This last part, the bulk of the consulting, entails an extended prototyping and development period as it would be most beneficial to purchase a single PDA and develop and test the modified data collection and conversion process.

Approach

- Evaluate the current parcel information collection and conversion process by meeting with individuals who do the collection and conversion and see the process myself, then design Work Process Diagrams for both the current way and a proposed new way and explain to the CP the difference between the two.

- Engage in the extended test period (expanded on below). The new format, if adopted will not replace the current data collection and database system this year, but will chart the path forward. All changes described will be made to an isolated version of a database and will not interfere with the established parcel data collection and cataloging process. This testing period will be done over a series of phases that will gradually entrench the new system.

- Purchase a new PocketPC 2003 based PDA with Bluetooth support and GPS. This PDA will be loaded up with the shareware version of ArcPad, enabling for seamless interfacing of GIS data between Desktop PC and PDA. This step, one of the major desires of the CP, effectively eliminates the paper map from the equation, with the GPS providing the long awaited real-time positioning capabilities.

- Determine ArcPad's data collection capabilities to evaluate if it can collect and store GIS data as effectively as the Handibase form. ArcPad and ArcView have the capability to export data directly to Microsoft Access; however, the user friendly capabilities of data collection, most notably if it will have drop down lists like the Handibase form, need investigation and evaluation

- Update the forms in Microsoft Access to accept the new database entries. Explain to the CP how to do this.

- Remove as many parts of the conversion process as possible to allow near seamless transition from ArcPad to ArcView to Microsoft Access Database.

- Explore possibilities for future expansion taking into account the greater capabilities provided by a modernized PocketPC 2003 over a dated PalmOS PDA.

Expected Outcome

- New PocketPC 2003 PDAs will provide for greatly enhanced expansion of capabilities over current PalmOS PDAs such as screens that are able to display more dynamic and complex images, GPS receivers, and software that typically works better with Windows equivalents. New tools like Bluetooth Hotsyncing and GPS will become integral into the collection and conversion procedure, requiring less manual conversion and consumed time.

- Conversion scheme will reduce by a third or more the number of steps required to move information from the PDA to the database.

- Data collection will be simplified and made more complete by integration of ArcPad software into the collection process, allowing more seamless transition from collected data to ArcView.

- CP will be able to train other staff members and trainees in the new data collection and conversion scheme.

- CP will learn how to use ArcPad and manipulate the layers and GIS information on it, removing the need for external Handibase forms and paper maps.

- CP will develop a deeper understanding of the possibilities that modern PDAs have when working in conjunction with modern PCs and be able to expand on those capabilities in the future with new software for new projects, particularly in the off season.

Expanded Capacity

The three main benefits of this new system lie in ease of data collection, time saved, ease of data conversion, and possibilities for the future. If the surveyor has just the PDA with ArcView and GPS as opposed to a PDA with a paper map and a Handibase form, he or she will be able to collect and organize their data more efficiently, especially considering that instead of needing to replicate any notes or changes written on the paper map that he or she makes on a PC using ArcView, he could now just make those same notes and changes on ArcPad, on site. This saves time by reducing errors and decreasing the amount of manual conversion involved, and could potentially remove the need to have Handibase as part of the database process, mitigating the role of the CP and other staff members in a wrote conversion process. While this will require changing the Microsoft Access forms, the end result should be a much smoother transition from collected data to cataloged database. Finally, some of the greatest potential lies in the future. Earlier generation PDAs had their capabilities limited largely by design – the screen was too low resolution or only two color, there wasn't enough memory, it was not fast enough, it only supported serial-port hot syncing – issues of that type. With newer PDAs, nearly all of these problems have been overcome, allowing them to act as true partners with more powerful desktop PCs for the next several years. The included GPS and Bluetooth technologies will open possibilities for future projects that require wireless capabilities or location specific data. As a result, the CP should be able to use the PDAs that they

will need to invest in for more than just this one project. This will be particularly useful during the seasons when parcel data is not collected.

Feasibility Analysis

It is probable this project can be done in this semester. Much of the project involves installing software, organizing a conversion plan and updating a pre-existing database. It uses entirely off the shelf products and, at least in the test phase, mostly trial versions of software. The greatest stumbling block will be making the conversion of data from the PDA to the Access database as efficient as possible and in the right format. Once that issue is solved, the problem quickly shifts from "can this be done in this semester" to "what else can be done". The expanded capacity offered by GPS will be implemented only after the core work of a new data conversion process is complete. Since most of my time at CTAC will be spent during the aforementioned trial period, expansion will largely be the responsibility of the CTAC staff. Once everything is up and running; however, maintaining it and expanding it should be less difficult than maintaining and expanding the current system. Introducing new PDAs to the project would merely be a matter of buying them and loading them with the appropriate software. The CP is very motivated about this project and looks to expand and improve the parcel data collection project, and furthermore, explore new project opportunities for the new PocketPC PDAs. The entire staff has expressed a desire to see this project evolve from its current, rather low-tech and inefficient state into one of the larger projects they offer and are more than willing to finance it and take the time to help create a new data conversion scheme.