Lawrenceville Corporation
Dennis Troy, Executive Director
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MISSION: The mission of Lawrenceville Corporation is to promote community and economic development in the Lawrenceville and Strip District neighborhoods in the City of Pittsburgh.

I.   The Consulting Situation

The Organization

For most of the 20th century, Pittsburgh's Lawrenceville and Strip District neighborhoods enjoyed prosperous economic times, home to such industrial heavyweights as Westinghouse Airbrake, ALCOA, American Bridge and Crucible Steel. When the steel industry declined in the 1970's, the two neighborhoods also began to decline as well. Lawrenceville Corporation's mission is to develop these neighborhoods and make them as prosperous and lively as they once were.

Lawrenceville Corporation, located in a newly renovated building on 3445 Butler Street in Pittsburgh, is a community development organization serving the 11,000 residents and 6,000 employees of Pittsburgh's Lawrenceville and Strip District neighborhoods. The organization, with its $815,000 annual operating budget and its eleven employees, focuses on economic development and social services [see Appendix A]. Its funding comes from city, county, and state grants, as well as donations from corporate sponsors, or "members." As a result, most fundraising is done via proposal writing or membership drives.

Economic Development Programs
- Industrial and Commercial Outreach – The organization encourages businesses to relocate or perhaps start-up in the Lawrenceville and Strip District neighborhoods. Lawrenceville Corporation is a factor in easing these businesses' transition into the community.
- Real Estate Development – The organization is always looking to make deals on properties in the area, whether selling or leasing properties they own, or purchasing new properties. Much of their work is with foreclosed properties that are unattractive to prospective buyers because of an increased initial tax burden, which, for example, could turn a piece of land worth $7,500 to a piece of land costing the buyer $117,000. Lawrenceville Corporation works on such foreclosures, often buying the property, trying to deal with the tax burden in a number of ways, and then selling it to the private sector.
- 16:62 Design Zone – The Design Zone is a strip of land ranging from the 16th Street Bridge in the Strip District to the 62nd Street Bridge in Lawrenceville. Through both commercial outreach and real estate development, Lawrenceville Corporation is helping turn this area into a corridor of design-related businesses.

Social Services
- Family Support Program – One of the organization's three facilities is dedicated to this program, which has served over 140 families since 1998, when it was first created. Funded by the Heinz Endowments, the program provides vital services to neighborhood families, such as a summer program for children serving over 60 kids every summer. There are no eligibility requirements for these families. This family support center also has two computers available for public use.
- Senior Connection – This is a program designed to help seniors get over the challenges of aging, and at the same time, helps them remain connected to their community.

- Neighbors in the Strip (NITS) – This program's main concern is the safety of the Strip District neighborhood. NITS is based in the third building occupied by the organization, located in the Strip District. The primary mission of NITS is "keeping the streets safe and the neighborhood informed."
- Community Advocacy Series – Run in conjunction with the Bloomfield/Garfield Association, the series includes topics such as home-buying seminars and land-use planning.
- Beautification – The organization runs a host of neighborhood beautification programs, with the intention of planting more trees and gardens throughout the neighborhood.

The Executive Director of Lawrenceville Corporation is Dennis Troy, and he reports to a Board of Directors. Mr. Troy was the Industrial Development Representative at Lawrenceville Corporation from 1993-1995, after which he left to become Director of Economic Development of Allegheny County, until his recent return to Lawrenceville. He runs the Lawrenceville Corporation business operations, which includes meeting with clients (often potential developers), keeping track of organizational finances, raising funds, and responding to property information queries. In addition to the executive director, there are four other staff members that work in the organization's main facility: an executive assistant, a community organizer, a Design Zone coordinator and a receptionist.

The Technical Environment
Equipment
Lawrenceville Corporation has attempted over the past few years to streamline their operations via technology.
- Telephones – Each phone is equipped with a caller ID service so that unwanted or unimportant phone calls can be sent to voicemail. All rooms in the facility are also wired with data ports.
- Security – An automated attendant system at the main door provides security, as well as saves the organization time spent monitoring who comes in and out of the building.
- Computers – The 3445 Butler Street headquarters has five PCs plus a server [see Appendix B]. The PCs are networked with category 5 Ethernet cables to the server, which is connected to the Internet through a dialup service provided free to the organization by Stargate. The server is also plugged into an APC power supply, and is backed up with a tape system. The network was set up and configured by a Board member of the organization.
- Peripherals – There is a multifunction printer/scanner/fax machine in Mr. Troy's office, which is accessible to everyone in the organization. The organization also has another fax machine, a copier, and an automated postage center.

Uses
Everyone in the organization performs word processing tasks using Microsoft Word, and all employees check their email and set up their calendars using Microsoft Outlook. For most employees, this is where use of technology ends. The only exception is Mr. Troy, who also uses Microsoft Excel and QuickBooks to keep the organization's financial spreadsheets organized, and Microsoft Access to access a property database. This database is located on the server, and is comprised of a single property table made up of 630 records. The table consists of 43 fields, including a unique ID for each record, and other fields such as lot size, lease status, ward, and property name [see Appendix C]. Not all records are updated, and complete information is not available for each property, though this is the exception and not the rule.

Management
When a technical problem occurs, Mr. Troy asks for assistance from a computer literate Board member. This Board member is not a computer specialist by trade, but is often able to help nonetheless. If the issue is minor, often times he will help Mr. Troy solve it over the phone. If the Board member has to come on site to deal with the problem, the response may take anywhere from several hours to a few weeks. If he is out of town or unavailable, the Board member sometimes sends one of his associates to debug and fix the problem.

Of the organization's $16,000 annual technology budget (based on 2001 numbers), $1,500 is dedicated to maintenance issues. However, there is no specific maintenance plan, but rather the money is used on a case-by-case basis as needed.

The Consulting Focus
The following problems and opportunities were the focus of the consulting work throughout the semester:
1. Managing events with Microsoft Outlook
2. Streamlining data retrieval
3. Adding graphical capability to database
4. Breaking dependency on executive director
5. Delineating a process of making property information publicly available

Managing Events with Microsoft Outlook
Lawrenceville Corporation is a very active organization, with employees that are often out of the office, meeting with clients or attending hearings and seminars. Thus, they have busy schedules. It is often the case that Mr. Troy needs to schedule meetings at very short notice. Scheduling a meeting required Mr. Troy to set a meeting time and then hope that it fit everyone's schedule. He needed an easier way to schedule meetings that would reduce the time and effort required.

If he had access to his employees' calendars in Microsoft Outlook, he could schedule convenient meetings without having to track down a given employee to ask whether or not the time was feasible (assuming the employee kept her calendar up to date). Furthermore, if there existed a shared calendar on the network, events affecting the organization as a whole can be planned and organized at one convenient place. The consultant took Mr. Troy through the process of setting permissions in Microsoft Outlook, and also through the process of setting up and maintaining a shared calendar in Outlook.

As a result, Mr. Troy is better informed of his staff's actions, and if new computers are purchased in the future, he himself will be able to modify permissions and set up a shared calendar. This is a timesaving measure, giving Mr. Troy more time to perform his other duties as Executive Director, such as proposal writing, thus furthering the mission of the organization.

Streamlining Data Retrieval
As Executive Director of Lawrenceville Corporation, Dennis Troy is often approached by clients—
namely potential investors—eager to find information about specific types of properties in the
Lawrenceville and Strip District neighborhoods (e.g. a client may call and ask for information on
properties for lease in Lawrenceville that have a building area between 20,000 and 30,000 square feet).
Mr. Troy has a database of over 630 properties in these two neighborhoods, stored in Microsoft Access
format. Previously, when a client called to ask about a certain category of properties, Mr. Troy had to
search through this database manually, record by record, looking for properties that match the client's
specifications. Several hours after the initial call, Mr. Troy would call the client back with the
information. This is due not to the structure of the database, but to a lack of knowledge of how to
efficiently use Microsoft Access. Mr. Troy, however, is the only person in the organization with any
knowledge of how to perform these tasks, so they are left to him.

This was a problem for the organization on several fronts. First and foremost, this process took a large
amount of time out of Mr. Troy's schedule. This time could be better spent working on proposals and
managing the organization. Mr. Troy has been focused on streamlining the operations of the
organization, trying to do things in a more efficient and effective manner, but since property data retrieval
is such a large part of his work, and was done in such an inefficient manner, much of this streamlining
was for naught. The more effectively Mr. Troy can spend his day, the less time it takes to accomplish the
goals of the mission of Lawrenceville Corporation. Second, the fact that this process took so much time
hurts the credibility of Lawrenceville Corporation. Providing quality service in a timely manner describes
an agency that realtors are willing to work with, thus furthering its agenda. If Mr. Troy can bring
Lawrenceville Corporation up to that level, by providing property data to clients in minutes instead of
hours, he will attract more clients to the organization who spend more money in developing
Lawrenceville and the Strip District, thus furthering the organization's mission.

The consultant addressed this issue in a manner that is sustainable after his departure. Because the
property database is stored in Microsoft Access format, the consultant went through a series of steps with
Mr. Troy intended to streamline the process of retrieving specific data from a Microsoft Access database.
The consultant took Mr. Troy step-by-step, starting from simple sorting techniques and culminating in
teaching Mr. Troy how to deal with advanced filters and queries. Since every computer at Lawrenceville
Corporation already comes equipped with Microsoft Access, no additional technical resources were
needed.

Understanding the more advanced features of Microsoft Access enables Mr. Troy to perform his property
information queries in record time, again, leaving him with more time to discharge his other executive
duties. Since he is able to perform more tasks in the same amount of time as before, and these tasks
further the organization's mission, understanding these features of Microsoft Access helps the
organization attain the goals of its mission.

Adding Graphical Capability to Database
After the initial phase of database querying has provided the client with a list of a few properties of
interest, the client almost always asks for a tour of the property. The client at this point needs more
information about the location of the property, its surroundings, and its current condition than the
information from the database can provide alone. Thus, Mr. Troy would spend several hours a week
driving clients through Lawrenceville and the Strip District, giving them tours of various properties.
These tours often took more time than expected, thus causing cancelled meetings and rescheduled
appointments for Mr. Troy.

This is not a task he can delegate to other employees very easily, since he is the most experienced when it comes to real estate development, and he knows the properties better than any one else in the organization.

These tours caused Mr. Troy to be out of the office for long periods of time during the week, which he instead could be spending doing more pressing paper work, financial management, etc. Behind his desk, Mr. Troy can obviously do more to further Lawrenceville Corporation's mission than from behind the wheel of his car. If not addressed, this issue will continue to remain a large loss of time for Mr. Troy. If addressed, Mr. Troy will gain a substantial amount of time per week to allocate among the other tasks he is responsible for, and perhaps enough time to start new development programs.

The basic opportunity is that if clients could narrow their list of properties down to two or three while sitting in Mr. Troy's office, Mr. Troy would not have to spend nearly as much time giving tours. This narrowing down could possibly occur by providing maps, videos, photographs, etc. of the properties to the clients in the office.

The consultant attempted to find a method by which to satisfy the clients' needs while saving Mr. Troy time. In conjunction with Mr. Troy, the consultant obtained photographs of various properties in digital format. Then, the consultant walked Mr. Troy through the process of linking images into a database, all done from within Microsoft Access. At this point, Mr. Troy will be able to bring up imagery of a given property along with other information when he submits a query, perhaps allowing clients to rule out certain properties without Mr. Troy physically taking them on tours.

Breaking dependency on executive director
For nearly every task involving technology in a non-trivial way, Mr. Troy is the lone contact point in the entire organization. From analysis of the situation at Lawrenceville Corporation, it was apparent that the organization would run more smoothly and more efficiently if some of these tasks were delegated to other members of the staff. The consultant attempted to make this possible, specifically by making property data retrieval a task that many in the organization are capable of doing. The consultant researched several ways of making such tasks more accessible to a technologically inexperienced group, and chose among these the best alternative that matched the know-how of Mr. Troy's workforce. The end result is that some tasks will be taken off of Mr. Troy's shoulders, giving him more time for his other duties in furthering the organization's mission.

Delineate process of making property information publicly available
Looking several months into the future, it seems like a good plan to somehow give the public access to the property database, so that prospective investors can do their own queries, which would free up a considerable amount of time for Mr. Troy. There are several methods to do this, however, and each of these methods carries risks. The consultant described some of these methods, and after going through a cost/benefit analysis of each with Mr. Troy, determined each method's feasibility. After selecting the most feasible option, the consultant addressed the issues involved in making this option a reality, giving Mr. Troy an understanding of the resources, knowledge, and time that are necessary for the undertaking of such an endeavor.

This effort was meant to create in Mr. Troy a deeper understanding of all the factors that go into such a transition process, so down the road, if he chooses to go down such a path, he will be knowledgeable of the risks involved, and the steps that must be taken in order to complete his goal. (Because of its nature, this opportunity is discussed in the next section as a recommendation stemming from the second opportunity.)

II.   Outcomes and Recommendations

Consulting Outcomes
1. Managing Events with Microsoft Outlook
Outcomes
Permissions are set on the staff's computers so that Mr. Troy has access to every employee's calendar through Microsoft Outlook. When scheduling a meeting, Mr. Troy checks to see whether the staff member he is meeting with is busy or not at that time. He also reviews every employee's schedule, in order to monitor how time is being spent throughout the organization.

Also, a shared calendar was set up in Microsoft Outlook. This calendar is shared as an Outlook public folder over the organization's local area network (LAN). Everyone in the organization has access to this shared calendar, both in terms of viewing the contents and in adding new events.

Evidence of Sustainable Expanded Capacity
- Only one week after the shared calendar was configured and ready for use, the organization's receptionist began transferring event information from the white board calendar on the wall over her desk to the online calendar.
- Conference room bookings began to appear on the shared calendar. Seeing that I never suggested this to Mr. Troy, the fact that he took the initiative to add such events to the calendar indicate that he understands the capabilities and benefits that the calendar presents.
- Mr. Troy looks at his staff's schedules before setting up a meeting in order to minimize scheduling conflicts. Before the consulting situation, he could not do this.
- All of the staff members in the organization's Butler Street headquarters reported being comfortable adding to and viewing events on the shared calendar.
- Mr. Troy has the knowledge of how to change permissions of folders in Microsoft Outlook, so as new employees come, or new computers are purchased, Mr. Troy will be able to set the appropriate permissions.

The biggest risk to sustaining this capacity is if the Lawrenceville Corporation staff loses interest in the shared calendar, and stops updating it. Currently, it is not clear how much this calendar is in use, since the information on the shared calendar in Outlook is still duplicated on the white board calendar above the receptionist's desk. If staff members stop updating the shared calendar with events, no one will look at it anymore, and there is the risk that the organization will go back to the low-tech method.   Strong leadership may be needed in order to ensure continued use of this valuable resource. Similarly, if staff-members do not update their own personal calendars in Microsoft Outlook, Mr. Troy will not be able to accurately judge whether a proposed meeting poses a conflict or not, despite the fact that the appropriate permissions are set.

Recommendation
After talking with the staff, I was under the impression that some confusion exists among them as to what type of information should be posted to the shared calendar, and what type should be posted to the personal calendar. In order to ensure that the calendars can be used for their expressed purpose, there need to be expressed guidelines for what information goes on the personal versus the shared calendar. This will save the time wasted sifting through irrelevant events when looking through the shared calendar.

In order to accomplish this goal, Mr. Troy needs to think about what type of information should be common knowledge to all employees, and what type of appointments should not be shared for everyone to see. A good starting point is to limit the shared calendar to events that would otherwise be posted on

the white board, and the personal calendar to all other events. Since the Lawrenceville Corporation staff is already used to the white board calendar, by phrasing the guidelines in this manner, a smooth transition from low-tech to high-tech is likely. Another suggestion is for employees to post the dates and times of pre-planned vacations, doctor's appointments, etc. on the shared calendar, so even those without full access to everyone else's calendar (i.e. everyone but Mr. Troy) will know whether a certain staff member will be in on a given day or at a given time.

The most important resource for this recommendation is the organization's receptionist. She is the one that maintained the white board calendar, and thus has the most experience when it comes to deciding what goes on the new shared calendar.

2. Streamlining Data Retrieval

<u>Outcomes</u>
Mr. Troy sorts data in a table by one or more fields. He also filters the data in multiple ways in order to view only the information that is relevant to a particular query. When using Microsoft Access' Advanced Filter, Mr. Troy saves the filtered results as a query for future reference.

<u>Evidence of Sustainable Expanded Capacity</u>
- During a consulting session, two clients called Mr. Troy looking for properties in Lawrenceville and the Strip District that met certain criteria. Mr. Troy proceeded to create an advanced filter in Microsoft Access with the criteria of the first client. He found that no properties matched the first client's needs, so he created a second advanced filter with the criteria of the second client. In this case, some properties were returned as a result, so Mr. Troy saved the results as a query, so that they were ready for when the client called back later in the day.
- Mr. Troy reports that the new database capacity saves him at least five hours a week and that he is able to respond to clients within minutes and hours rather than days.
- When Mr. Troy needs to refresh his memory on an Access function or needs to solve an Access problem, he uses a reference book, Virginia Andersen's *The Complete Reference: Access 2000*, published by Osborne/McGraw Hill. This reference was used extensively in the learning process.
- On his own, Mr. Troy developed a printed report within Access. He applied appropriate filters and learned how to construct such a report with the resources he had at hand (i.e. the book and Microsoft Access help screens).

The biggest risk in sustaining this capacity is that explicit knowledge of Microsoft Access exists in only one person in the organization: Mr. Troy. If he were to leave, sustainability would most likely be lost.

<u>Recommendation</u>
In today's Internet age, it is tempting for an organization to go full-speed ahead and make as many services as possible available online for its clients. In the case of Lawrenceville Corporation, the first thing that comes to mind is to make the property information database available in one form or another online for clients to search through. Clients could fill out an online form, which would return all properties in the database matching their search parameters. It is important, however, to analyze such an endeavor carefully in terms of costs and benefits before proceeding.

Benefits
- Online applications such as this can increase the organization's credibility by creating a more professional and convenient environment for the clients.
- Clients who use this online service will come into meetings with Mr. Troy better informed about the properties in the Lawrenceville Enterprise Zone, making for a more productive and efficient meeting.
- With online forms already on the website, it becomes easier to expand this capacity, for instance, by creating an online form allowing clients to update their property information online.
- Mr. Troy would be saved the time it takes him to answer phone calls of this nature, and to subsequently perform the property search himself.
- Placing such information online allows the organization to cater to a broader audience, since now a call or a visit to Mr. Troy is no longer required in order to become familiar with Lawrenceville properties.

Costs
- Incorporating this online application into the organization's website, which is currently under construction, will significantly increase the cost of web design. The website currently under construction is static, which means that although the information online can be updated, the website by nature does not need to constantly be in contact with a data source in order to function. An online form linked to a database needs to do just that, making it a dynamic web page, which is more complicated—and costly—to create.
- Web maintenance will be more expensive, since a dynamic website involves more complicated programming, making it more difficult for someone who is not a computer professional to sustain it. Thus, either Lawrenceville Corporation would need to hire a fulltime technical administrator to take care of the website, or they would need to pay the web host significantly more money in order to deal with the added complexity of the web maintenance.
- The property database currently exists on the organization's server. In order for the website to have up-to-date property information, it needs to constantly be in touch with the database, which means communication must occur regularly between the Lawrenceville Corporation server and the server running the website, located at Stargate. In this case, the organization's 56k dialup connection to the Internet suddenly becomes too slow to handle the added web-traffic, and thus must be upgraded, at higher cost (e.g. high-speed DSL for a nonprofit organization runs at least $90 a month).
- If the database becomes available for the public to query online, security suddenly becomes a far more important concern for the organization. It is conceivable that additional money would have to be spent on software specialized for database security.

After analyzing these benefits and costs, I recommend that Lawrenceville Corporation does not go ahead with creating an online property search application. The costs seem to severely outweigh the benefits. This is even more the case now after the consulting situation, since it now only takes Mr. Troy a few minutes to perform a property search, and will thus not be saving any time by moving the search online. Also, incorporated into the current design of the website is information on all the businesses in Lawrenceville, which should be enough by itself to draw in potential investors from a broader audience. On the other side, the largest cost would be that of designing and maintaining the page. The following website provides good estimates of such costs: http://www.charityadvantage.com/learnmore.htm. This resource, on the other hand, goes into more detail on all that is involved in putting a database online: http://builder.cnet.com/webbuilding/pages/Servers/ChoosingWebDB/?tag=st.sw.3665.cvrg.f042000.

3. Adding Graphical Capability to Database

Outcomes

A new Imagery table was created in the Lawrenceville Enterprise Zone property database [see Appendix D]. I showed Mr. Troy how to add records to this table, and specifically, how to link an image stored on the computer to the table.

Evidence of Sustainable Expanded Capacity

- Mr. Troy created a new record in the Imagery table, linking a map of the 16:62 Design Zone. There is still a problem despite this extended capacity, however: Mr. Troy does not have many images in digital format, so this Imagery table has yet to be used for practical purposes.
- Mr. Troy understands that the file to be linked is actually at a remote location, and even meant for it to be this way, so that he could update images on the server, for instance, and have them automatically be updated in the database.
- After learning how to link images into the table, Mr. Troy immediately picked up a recently received artist's rendition of the soon to be built Doughboy Square Center building on Butler Street in Lawrenceville, scanned it in, and linked it to the table.

Again, as previously mentioned, Mr. Troy is the only one in the organization with explicit knowledge of Microsoft Access. If he were to leave, sustainability of this outcome would most likely be lost.

Recommendation

I see one main risk that some of this capacity may be lost in the future. The Imagery table is not useful when there is no imagery available to link to it. Lawrenceville Corporation has very few images of properties stored in digital format. They have some photographs available that can possibly be scanned in and linked, however, and they do have access to a digital camera. If this expanded technical capacity is to be sustained, the organization has to consistently add images to the table as old properties change or new properties become available.

Mr. Troy should obtain digital imagery of the properties in the Lawrenceville Enterprise Zone, store this imagery on the server, and then create an entry for each imagery item in the imagery table we have created in the LEZ Property Database. This imagery can include blueprints, photographs, and video tours of the properties.

An efficient way to obtain high quality digital imagery is through the use of digital cameras. For still photos, a simple digital still camera would suffice, but for video, a digital video camera would be necessary. Digital imagery may be obtained from photographs, but it takes more time. This involves getting the film processed and then scanning the appropriate photograph using a scanner, which could take a total of three or four hours, as opposed to the few minutes it takes to download images from a digital camera to a computer, and then link them in the database. Also, it costs money to purchase and develop film, while downloading images from a camera is free. Digital cameras vary widely in features and in cost. Thus, if purchasing one becomes necessary, it is important to think about how it will be used. For example, if images taken from the camera do not need to be printed, and only need to exist in electronic form, a cheaper camera will do with lower resolution. The following is a helpful link when it comes to deciding which camera to purchase, giving reviews and prices for a variety of models: http://www.dpreview.com/.

This process will require quite a few resources to complete and sustain. First of all, this will take some time. Obtaining imagery of sites will usually require visits to those sites. In order to save time, I suggest that Mr. Troy not make special trips to sites, simply to take pictures, but rather, he should obtain imagery

while on the site, giving a tour. This imagery may even mean videotaping the tour [see Appendix E], which implies that Mr. Troy should only have to give about one tour for each property from now on, since thereafter, there will be a video tour available for clients to view.

4. Breaking Dependency on Executive Director
Outcomes
A simple "query by parameter" was created in Microsoft Access that prompts the user for a minimum and maximum lot and building area, as well as asks the user whether or not he or she is interested in buildings for sale, for lease, or both. These prompts exist in the form of dialog boxes that pop up one after the other, asking the user to input the appropriate value. The minimum and maximum values are required inputs, but either of the "for sale"/"for lease" queries (but not both) can be left blank, indicating that it will not be a constraint in the query. This provides a very user-friendly interface for performing common property queries that is simple enough for other Lawrenceville staff to use.

Evidence of Sustainable Expanded Capacity
- The executive assistant uses the general property query to search for properties, and reports that the system is easy to use.
- Mr. Troy now asks his assistant to find properties in the Lawrenceville Enterprise Zone.
- Mr. Troy has an understanding of how the query by parameter was created, so if the need arose, he could create one on his own. Also, all the information on how to create a query by parameter came out of the aforementioned Access reference that Mr. Troy purchased. This will be available for him to refer to in the future, further ensuring sustainability.
- Mr. Troy used the query by parameter to create a "report by parameter," something I did not even know was possible in Access. Now, when a Lawrenceville Corporation employee uses the general property search report, the same dialog boxes appear prompting for the same information as the query by parameter did, except now, a nice-looking report is generated, even containing the organization logo, ready to be printed and handed to a client. Again, Mr. Troy's thinking "outside the box," and applying his knowledge to contexts different than the traditional one in which he obtained it, is evidence that this extended capacity will be sustainable in the future.

There exists the risk, however, that Mr. Troy continues to take the burden of property search—albeit a much lesser burden with his expanded capacity—all on himself. Other staff members will forget how to use the property search, and will lose interest, and for all intents and purposes, eliminating this expanded capacity. Also, the database is currently located in a private folder on the server that only Mr. Troy has access to. If other employees want to use the property search, at this point they would have to run it from Mr. Troy's computer, defeating the purpose of making it easily accessible to all. If this issue is not addressed, some of this capacity could be lost.

Recommendation
Without continued training and development, the staff risks losing all extended technological capacity, especially if Mr. Troy is out of the office for long periods of time. A regular training plan, with a focus on Microsoft Access, would do much to alleviate this risk. This plan should involve regular meetings of the entire Lawrenceville Corporation staff, where everyone is free to discuss problems they are having with technology, or give ideas on how technology might be used to make a certain task more efficient. This information can be taken down, and Mr. Troy can have it under consideration when he is writing proposals and planning for programs. This is important because if streamlining the organization through technology is a goal that Mr. Troy holds in high importance, it makes sense that the organization's staff is well-informed technologically, so that no staff member is left behind doing things the low-tech way when the rest of the organization has moved to a more efficient, high-tech method.

However, everyone who works for Lawrenceville Corporation has a busy schedule, so it may be difficult to find a time appropriate for everyone. The actual information that Mr. Troy will be relaying to his staff will come from Mr. Troy's own knowledge of Microsoft Access, guided by the reference he has purchased. One suggestion is that Mr. Troy skim through the Access reference, and if he finds anything that could be of use to the organization, he can perhaps suggest it to the rest of the staff, as well as the Board. The following websites may be of use when it comes to developing a training plan:

- http://www.techsoup.org/articles.cfm?topicid=9&topic=Training&tag=hp008. This site gives detailed information on the different issues that come up when creating a technology plan, and even includes worksheets designed to help a nonprofit organization develop such a plan.
- http://www.pittsburgh.net/yellow_pages.cfm?chr=computer+training. This website gives a list of computer training organizations in the Pittsburgh area.

Additional Recommendations
Technology Maintenance Plan
Problem
For over four weeks, Lawrenceville Corporation was without Internet service. The local area network was functioning properly, but the server could not make a connection with Stargate, the organization's Internet Service Provider. No one in the organization had the know-how to diagnose or fix the problem, so the staff was dependent on the volunteer work of a Board member to finally fix the problem.

Recommendation
Lawrenceville Corporation needs a computer service/maintenance contract, and needs to budget accordingly. This service provider must be reliable and familiar with the hardware and software existing at the organization. This means that there should be some guarantee that, whenever a computer problem arises in the organization, it should be resolved within a pre-negotiated amount of time (e.g. 24 hours at most).

Rationale
Though several times before Mr. Troy expressed confidence in the organization's practice of relying on the volunteer work of a Board member whenever they are in technical trouble, more than a few incidents suggest that this is not necessarily prudent. Since much of the organization's correspondence occurs in the form of email, and this is the direction in which Mr. Troy wants to push the organization even further, a loss of connectivity is a blow to the organization's progress towards meeting its goals, thus shining light on problems in the way technical management is organized at Lawrenceville Corporation. Mr. Troy cannot push his staff to make full use of available technology, while at the same time ignoring the importance of a reliable maintenance plan. The organization cannot afford to lose Internet connectivity every other month.

The recommendation is sustainable, as long as Mr. Troy can continue to bring in funding for it. I believe this is such a critical step that must be taken by an organization of Lawrenceville Corporation's stature that Mr. Troy should not have much trouble doing so.

Resources

The obvious resources needed for this recommendation are time and money. It takes time to do research in order to find the vendor with the best service at the lowest price. The organization already deals with Shiloh Corporation for some of its computing needs, but it is always a good idea to shop around for such contracts. Such a contract costs money, so Mr. Troy will have to write proposals justifying to donors why they should support such an investment. It should also be helpful to Mr. Troy if he were to confer with executive directors of other nonprofit organizations, in order to learn from their experiences regarding technology maintenance. The following links provide directory listings of technology maintenance providers in the Pittsburgh area:

- http://www.pittsburgh.net/yellow_pages.cfm?CtgID=25&GrpID=10

- http://yp9.superpages.com/listings.phtml?SRC=&STYPE=D&PG=L&CB=1&C=Computer+Repair&RT=Pittsburgh&RS=PA&RR=20&T=&S=&Expand=Y&R=D&search=Find+It&pow=0&rtd=yp3.superpages.com

Regular Database Maintenance

Problem

The Lawrenceville Enterprise Zone property database is not properly maintained. Many records have incorrect or missing information. For example, 78 of the 630 properties have a lot area of zero, according to the database, which is obviously incorrect. Furthermore, it is not evident that the organization has a regular backup schedule for the property database (as well as their other databases, for that matter, that store donor information, etc.), which is unfortunate, seeing as to how crucial it is to the organization.

Recommendation

First of all, Lawrenceville Corporation should make an effort to contact the owners, tenants and/or agents for all properties listed in the database, in order to verify that the stored information is correct. For the approximately 20% of the properties without any owner/tenant/agent information, as well as for the properties where the owner/tenant/agent could not be reached, an effort should be made to find the updated owner information, either by visiting the property in person, or by obtaining the information from Allegheny County (see resources below). Since there are 630 records in the database, it is impractical to do this for all properties at one time, so this initial update process could span over several weeks, with maybe a dozen properties updated each week.

After the first step is complete, much of the more permanent information in the database should be relatively correct (i.e. attributes like lot area do not change often, if at all). However, the two most dynamic (and arguably, most important) fields in the database, FOR_SALE and FOR_LEASE, should be updated more often. Again, due to the size of the database, it would be impractical—and unnecessary— to attempt to update this information all at one time. I suggest, however, that every month, a sixth of the properties are updated to this extent, so that every year, each property will have had its lease/sale status updated at least twice. Since this task does not require any contact with the agents, tenants, or owners of the properties, since properties for sale or for lease are advertised as such, it is conceivable that this task can even be accomplished by volunteers, once a month. On that same note, since it behooves the owner of a piece of land to advertise that it is for sale or for lease, when contacted as detailed above, it is not unreasonable to advise owners to contact Lawrenceville Corporation if the lease/sale status of their properties change.

Thirdly, the database—as well as other important information stored on the server and elsewhere, for instance, the shared contact list—needs to be backed up regularly. How often the database needs to be

backed up depends on how often it is changed. The big question to ask is: How much work can I afford to lose? If the answer is "one week of work," then backups should be done weekly, etc. I feel that a weekly backup is not a bad idea, considering that a backup tape system already exists on the server, and the fact that this system is automated means that little, if any, effort is required from the organization staff.

Rationale
It is critical that the database be updated and maintained regularly. A property database with outdated information can be very costly to the organization, specifically when it is used in property information queries for clients. For example, a client may request information on certain types of properties in Lawrenceville and the Strip District, but because of outdated and/or incorrect information in the database, there may exist properties matching the client's criteria, but are not returned in the query. These are potential properties that could have been purchased or leased, thus bringing money into the Lawrenceville and Strip District neighborhoods, and promoting economic development in the community. Such investment cannot occur with property data that has not been updated on a regular basis.

Database backups are also critical to the organization. If all of the property information is lost, and backups do not exist, there would be a great setback in the property information queries. Much of the expanded capacity developed over the past few months would be lost, property information would need to be updated or obtained again, and property data retrieval would return to an inefficient manner.

Backups are simple enough that someone from within the organization could accomplish them. But by not updating or maintaining the database, the organization is hurting its own mission.

Resources
Two especially useful websites for implementing this recommendation are as follows:

- http://www2.county.allegheny.pa.us/RealEstate/. This is the Allegheny County Real Estate website. This site can be used to search for properties throughout the county (in this case, specifically in Lawrenceville and the Strip District) in order to retrieve property information (including the lot area, land and building value, owner information, floor plans, and photos). One can search by address, block/lot number, or owner's name.
- www.pittsburghcares.org
  This is a place where nonprofit organizations can register in order to become known to potential volunteers. The Pittsburgh Cares organization acts as a medium between nonprofits in the city and volunteers that want to help them. Lawrenceville Corporation could perhaps obtain some volunteers through this organization, in order to help with the task of updating the database.

Create a Two to Three Year Technology Plan
Recommendation
Lawrenceville Corporation should create a technology plan, including at least the following:
- The organization's current use of technology
- Long-term and short-term goals, and how the organization plans on getting there
- A budget for implementing the plan

There is a need for the organization to formalize its process of acquiring new technology, and updating existing technology. Also, the organization should plan ways to integrate technology into its programs. For example, in the future, there could be a computer lab at the Family Support Center with an organized program in place to educate the community on computer skills.

Rationale
Currently, it seems that the organization acquires technology in an ad hoc manner. That is, as the organization finds itself facing a technological need, it goes ahead and makes an appropriate purchase to fulfill it. It would be more beneficial if the organization planned its technological improvements, and attempted to predict its future needs. This is especially important for budgetary reasons—specifically the matter of getting funding for technology—since it is far more powerful to approach a potential donor with a proposal detailing a specific plan with set goals, rather than to approach a donor, simply saying, "We need computers."

Resources
Many resources are available on the Internet for helping a nonprofit organization develop a technology plan. The following websites list some ideas on what type of information should go into such a plan, and even include worksheets that take an organization through the technology planning process step-by-step:

- http://www.techsoup.org/articles.cfm?topicid=11&topic=Technology%20Planning
- http://www.helping.org/nonprofit/grants.adp
- http://www.coyotecom.com/tips.html
- http://www.benton.org/Library/Stratcom/TechLit.pdf

Provide Mechanisms to Ensure Data Security Over the Network
Recommendation
Lawrenceville Corporation needs to develop a network security policy in order to ensure the integrity and security of all data stored on all the computers throughout the organization. This policy should be a detailed description of who gets access to what files. In addition to creating this policy, the organization needs to ensure that the server is stored in a secure location, and that only authorized personnel have access to it. A backup of the information stored on the server, as well as server settings, should be stored in a secure off-site location.

Rationale
Anytime there is a network, security issues arise. It can be very damaging to the credibility of the organization if information, such as the LEZ property database, gets into the wrong hands. Similarly, the organization will be hurt if those who need access to certain files cannot access them. If a policy is well thought out, these problems should not occur, and network security should be prevalent.

Resources
The following are Internet resources on network/computer system security, tailored specifically for nonprofit organizations. It would be wise to look over the checklists and tutorials here before commencing with a security policy:

- http://www.npower.org/resourcesandlinks/HandsOnTechHowTos/NetworkingHowTos.htm
- http://www.mapnp.org/library/infomgnt/security/basic.htm

Use Virus Protection Software to Protect Network From Viruses

Recommendation

Lawrenceville Corporation should take the initiative to consistently and continuously protect its computers from viruses. This typically involves installing virus protection software on all computers, and making sure that the software and its virus definition libraries are always updated. It is often the case that the software will update itself regularly if connected to the Internet, as is the case at the organization. The virus protection software should be reputable (e.g. Norton AntiVirus, McAfee VirusScan), and should be configured such that new files are scanned for viruses as they are first introduced to the computer system, whether via download, installation, or anything else.

Rationale

In today's high tech world, any computer—and especially any computer always connected to the Internet, as is the case in Lawrenceville—is vulnerable to the threat of computer viruses. Viruses are often easily preventable, thus preventing damage to the organization and its credibility. Without virus protection, it is very possible that a computer network can become infected with a virus, wreaking havoc on the computer system, and damaging an organization's image. For example, a virus can corrupt files, thus effectively deleting such important information as the LEZ property database. Also, at an organization like Lawrenceville Corporation, which has over 830 shared contacts in Microsoft Outlook, many of these with stored email addresses, a virus could be spread to all of these contacts without the user doing anything whatsoever, thereby severely damaging the organization's credibility.
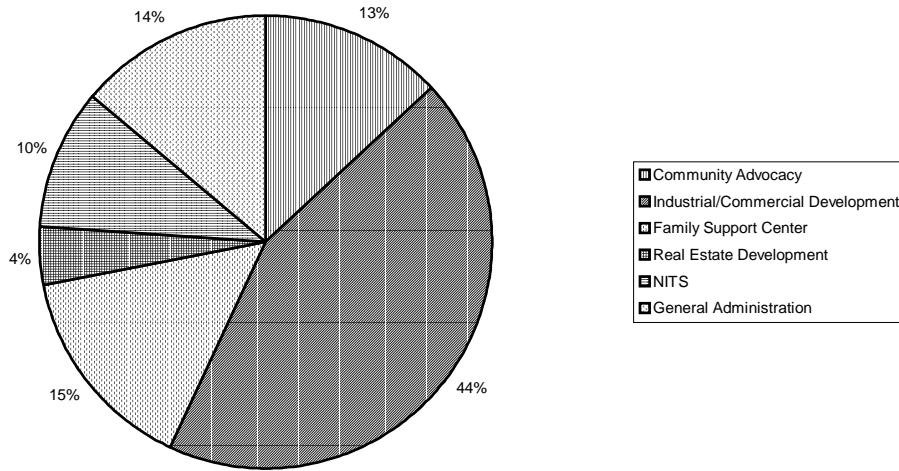
Resources

The following are Internet resources on virus protection, tailored specifically for nonprofit organizations. These consist of tutorials, checklists, and primers on the different nuances that come about when considering what needs to be done to protect an organization's computers from viruses:

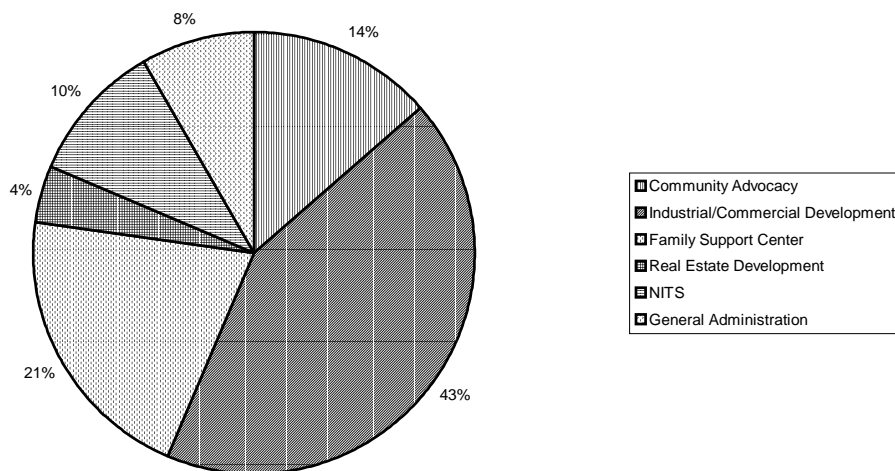- http://www.npower.org/resourcesandlinks/HandsOnTechHowTos/VirusProtectionHowTos.htm
- http://www.onenw.org/bin/page.cfm?pageid=14
- http://www.techsoup.org/virusvaccination.cfm

Revenues and Expenditures

Revenue, by Program

Legend
Community Advocacy
Industrial/Commercial Development
Family Support Center
Real Estate Development
NITS
General Administration

Expenditures, by Program

Legend
Community Advocacy
Industrial/Commercial Development
Family Support Center
Real Estate Development
NITS
General Administration

Computers

The following computers are located at the Lawrenceville Corporation's 3445 Butler Street headquarters:

Model	Processor	Memory	Peripherals	Operating System	Software
Shiloh	Pentium III 667 MHz	64 MB	-52x CD-ROM -250 MB Iomega Zip Drive	Microsoft Windows 98	-Microsoft Office 2000 Professional
Shiloh	Pentium III 667 MHz	64 MB	-52x CD-ROM -250 MB Iomega Zip Drive	Microsoft Windows 98	-Microsoft Office 2000 Professional
Shiloh	Pentium III 667 MHz	64 MB	-52x CD-ROM -CD-rewritable drive	Microsoft Windows 98	-Microsoft Office 2000 Professional -QuickBooks -ArcView GIS
Gateway	Pentium III	128 MB	-52x CD-ROM -250 MB Iomega Zip Drive	Microsoft Windows 98	-Microsoft Office 2000 Professional
Gateway	Pentium III	128 MB	-52x CD-ROM -250 MB Iomega Zip Drive	Microsoft Windows 98	-Microsoft Office 2000 Professional

Database Fields

Following is a list of the fields in the Lawrenceville Enterprise Zone (LEZ) Property Database:

1. ID
2. MAP
3. ZONING
4. WARD
5. MAP_SHEET
6. BLOCK
7. PARCEL_1
8. PARCEL2
9. PARCEL3
10. PARCEL_4
11. STREET__
12. STREET_NAM
13. STREET_TYP
14. ZIP_CODE
15. BLDG_NAM
16. OWNER_S_CO
17. OWNERS_FIR
18. OWNERS_LAS
19. OWNER_STRE
20. OWNER_CITY
21. OWNERS_STA
22. OWNERS_ZIP
23. OWNERS_PHO
24. TENANTS_NA
25. TENANTS_PH
26. AGENT_COMP
27. AGENTS_NAM
28. AGENTS_PHO
29. ACREA
30. LOT_AREA
31. LOT_LENGTH
32. LOT_WIDTH
33. BUILDING_A
34. NUMBER_BUI
35. LEASE_SPAC
36. FOR_SALE
37. FOR_LEASE
38. SALE_PRICE
39. LEASE_PRIC
40. COMMENTS
41. EDIT_DATE
42. SAME_PROPE
43. KEY_

Imagery Table

The Imagery table in the LEZ property database contains the following fields: ID, PID, TYPE, and IMAGE. The first three of these fields hold text, while the IMAGE field holds OLE objects. The ID field is a unique identification number that acts as the primary key for this table. The PID field represents a property in the LEZ Property table by matching up with the unique primary ID of that table. The TYPE field is simply an indicator of the type of object stored in the IMAGE field (e.g. "Area Map," "Blueprint," etc.).

Virtual Tours

With imagery information stored in the property database, Mr. Troy will be able to show images and blueprints to the clients from his office. He may even be able to email the clients some of this information. In practice, the most suitable solution for Lawrenceville Corporation is to limit the types of images linked to the table to be of a specified maximum size. For example, though digitized video may be appealing to a client who wishes to receive more information about a specific property in the LEZ, saving a one-hour tour into digital video form could produce a file as large as 100 megabytes. Since there are 630 properties recorded in the database, saving a video tour for each could require well over 63 gigabytes of space. (Refer to the Arizona State University Information Technology Department: http://is.asu.edu/r&d/video/compression.html.) This, coupled with the fact that a digital video camera is an expensive piece of technology, I recommend that the organization stay away from these 'virtual tours' until the technology becomes cheaper, both financially and in terms of space consumption. Thus, the organization will be left with still photos, blueprints, and maps to link to the database, which take up considerably less space, and are easier to obtain.