# Technology Consulting in the Community

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Jing Liu
Local Government Academy
Final Consulting Report

**Carnegie Mellon University**
**Pittsburgh, Pennsylvania**
**www.cmu.edu/tcinc**

# Local Government Academy
# Executive Summary

Student Consultant, Jing Liu
Community Partner, Susan G. Hockenberry

## I. About the Organization

Local Government Academy is a nonprofit corporation established in 1983. The mission of the organization is:

*Promote excellence in government through education*

The organization achieves their mission by providing academic instruction programs for local government newly elected and appointed officials, and municipal employees.

The most credential information for the organization is the contacts information and the corresponding participation records of the events. The organization has perchase a Microsoft Dynamics CRM online license to manage the contacts information and the participation records. The organization purchased an event registration service from the ABCSignUP to collect registration of events. The registration link is placed on the website of the organization, this website was donated and hosted by a local host service provider who has been out of the industry now. The problems lies within these is that these software and services does not communicate with each other smoothly which generates duplicate records and errors.

## II. The disconnected event registration process

The organization has a Microsoft Dynamics CRM system set up to manage the contacts and track their activity against the events organized by the organization and a ABCSignUp account the create event information and collect event registration forms. But these two systems do not communicate with each other smoothly.

## III. Outcomes

The main reason that duplicate errors appear is that user are asked to enter their registration forms manually each time they want to register for an event. So that user account will be a practical solution. A prototype of Wordpress-Dynamics CRM system is established. One the wordpress page customers can register themselves to be a contact in the dynamics CRM system. And later when they register they don't need to enter the information again.

Risk:

- Currently this is still a prototype, if the organization decides not to migrate this will not become real.

- There is still a lot of work to do to bring the website online, including detailed UI design, information migration.
- The plug-ins that enables the services may not be updated all the time.

# IV. Disconnected the event registration process

The organization has a website donated by a local webhost who has been out of business for a while. The legacy website cost the organization lots of work to maintain. And the website's structure prevents the organization to reorganize the content so that the customer can find information more efficiently.

# V. Outcomes

The new website prototype is based on the Wordpress platform, this platform was chosen because it has a lot of themes and plug-ins that allow the organization to excellent their service. For example, the organization can use the Docebo plugin to place some course information on the website.

# VI. Recommendations

## Vision

If the new web-site plan is implemented, the organization can improve their current event registration system by eliminate most of the duplicate records. Reduce the cost spent on ABCSignUp and the workload to fix errors.

Also, the organization will have a better website that presents information to customers more efficiently. Potential customers can find the description of the events easier. Also the beautiful website gives the customer a better impression of the organization and the programs they offer.

Since the organization has a limited human resource as well as their limited knowledge of technology, a third party must be involved in to the maintenance of the system, or at least a technical support that can help the organization to solve problems when they have one. The Microsoft technical support they are seeking for help currently is a good choice.

## Goals

### Goal 1: Implement the WordPress-Dynamics CRM prototype
### Goal 2: IT Budget

**Community Partner**

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**About the Consultant**

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Jing Liu is a senior in Information Systems.
He will begin working as a Software Developer for
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# Final Consulting Report

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## I. About the Organization

### Organization

Local Government Academy is a nonprofit corporation established in 1983. The mission of the organization is:

*Promote excellence in government through education*

The organization achieves their mission by providing academic instruction programs for local government elected and appointed officials, and municipal employees. The organization organizes academy programs to the 415 government organization across the Allegheny Area as a service.

The organization does not train individuals directly, instead they have a good relationship with the industry professionals that they will invite them to give lectures. The organization is in charge of contacting the instructors and the customers, provide venue for event and organize the events.

The organization currently has 3 full-time staff, and about 75 volunteers who help organize the programs. Since the area they are supporting is so large while the staff is limited, they have a relatively heavy workload on the operation. Also, due to the limited staff size, IT decision is often make by the executive manager herself. The organization currently has several systems running paralleled but does not talk to each other smoothly. An IT planning can help to prevent this phenomenon in the future.

As a nature of the government election, the organization has to update its contact list every 2 years. However, the organization does not have a well-integrated system that they can manage contact information efficiently. It brings a lot of extra work for the staffs to manage duplicated contacts and extra cost managing the contacts that have already gone.

The organization also has a website donated by a local web provider. Though, the website is unorganized and really hard for clients to find the information they need. They are now considering building a new website that can help them perform better.

### Facilities

The organization rents an office at a local building located at 901 Western Avenue. The office has 2 sub-offices and a reception area.

Most of the organization's technology is donated or rented as a service, they do not have much hardware to place on-site. That means the organization does not need to worry about maintaining the IT hardware. And they would like to keep this strategy.

## Programs

The main activities of the organization are the 'Newly Elected Officials Course' and the 'Contemplating Governing Course'. The first program is a 10 sessions for the newly elected officials in Pennsylvania. This program is held every 2 years based on the election period. The second program is aim to train the potential candidates for local elected office. This course is a three-part program.

The organization also provides 'Municipal Intern Program' for the local government. This program aims to provide service to communities by organize students from local colleges to local government as interns.

During all these activities, computer is more used to be a tool to manage the communications between LGA and their clients(participants).

## Staff

The organization has 3 full-time staffs and about 75 volunteers. The 3 full-time staff includes: Susan Hockenberry as the Executive Director, Sarah Welch as the Outreach & Communications Manager, and Pamela Barroso as the Programming Assistant. The interns are part-time and are assigned to work on a specific program.

The full-time staff members have their own computer and they make use of the Microsoft Dynamic CRM system to manage their daily business. Among them, Sarah has more knowledge about the technology and has developed the current work process based on CRM.

## Technology Infrastructure

| Software | How to get | Cost |
|---|---|---|
| Microsoft Dynamics CRM | Rent | $937.18/year |
| ABC SignUp | Rent | $1718.01/year |
| ConstantContact | Rent | $719.04/year |
| www.localgovernmentacademy.org | Donated | Free |
| Microsoft Exchange | Rent | $1559.02/year |
| Microsoft Sharepoint | | Come with Exchange |
| Liybsyn | Rent | $240.00/year |
| iPresent (Webinars) | Rent | $1207.77/year |
| SOS BackUp | Rent | |

The main problem related to the infrastructure may be that the CRM system does not connect with ABCSignUp and Constant Contact. Making managing contacts more difficult.

Also the website is old and messy. A share point is ready for them but they don't have time to develop a new website.

## Technology Management

The organization does not have a full-time technical staff. But they manage how to utilize their software themselves. The organization learns to use the software by books, articles on the Internet. Among all the staffs, Sarah is more knowledgeable in technology so that whenever a problem occurs, she is the one that will help fix it.

Since the organization have most of its IT software and hardware consumed as a service. They don't need to maintain the equipment directly by themselves. The problems that need to fix are mostly not that technical.

## Technology Planning

The organization currently does not have a technology plan.

Susan is the person that in charge of the financial issues and she is also the on that makes decisions. The process acquiring a new technology (software/hardware) is ad hoc. Susan is the one that can make decision, but she would prefer that Sarah and Pamela could present to her a thoroughly researched plan. Then she will figure out the way to fund this plan.

## Internal Communication

The organization has a Microsoft Dynamic CRM online system, they store their client's information in the CRM system.

Externally the information is communicated in a variety of methods: e-mail, direct mail, phone call, SMS, and fax. The organization records the personal information of their clients, donors and volunteers. This information includes: Full name, e-mail address, address, position in their own organization, and the previous activities with LGA.

## Information Management

The current Microsoft Dynamic CRM centered technology infrastructure is established by Sarah and used by all three staff members.

Most critical information for the organization is the clients and the donors' contact information. The activities between the clients/donors and LGA are also critical for further marketing.

## Business Systems

The organization uses ABCSignUp to track the client's payment and invoice for programs. They use CRM to manage contacts, record of participation and fundraising.

For expense they pay with credit card.

## II. Improved the event registration process

### Motivation

Currently the organization is using Microsoft Dynamics CRM System to manage their contacts and using ABCSignUp to collect customer registration for events. There is a gap between these two systems so the synchronization of contacts between the registration system and the CRM is completed manually. This disconnection creates unnecessary workload in finding duplicated contacts and dealing with import errors. The registration information was initially collected and stored in the ABCSignUp system. After that a staff will export that information in to a Microsoft Excel .csv file. She would then import this data into the Dynamics CRM system as new contacts. While errors is generated in this step. Since the customers enter forms at their own option, they might input different information in different registration forms, the different records are both imported into the CRM system but only one contacts is really added. This problem cost extra time and work to fix. Since the organization have a limited staff, relief of such workload can help the organization better perform in other areas including fund raising, program organization and other services

### Outcomes

A prototype of WordPress-Dynamic CRM integration is developed for the organization. The WordPress website has a user account system, the MS Dynamics CRM system has an add-in called "Power Web Form" that can generate a form which collects personal information from the customer and store it in the CRM database directly. Customers are required to register to the website before they can register to the events managed by the organization. And when it comes to the event registration, the user does not need to enter personal information every other time like they currently required on ABCSignUP but can submit his application to the system by a single button click set up by the event management system "Event Espresso".

Before the project, the LGA used to use ABCSignUp.com to manage the events. Clients will now go to the ABCSignUp.com and register with a form that will collect their personal information. After that Pam will go to ABCSignUp.com and export the list of attendees to an excel file and upload this file into the Dynamics CRM system. Because of the flexibility of the form grants the clients, they may enter different content every time they enter the form and this creates a lot of duplicate records in the Dynamic CRM system.

In the new prototype, the registration will be automated by integrate the WordPress website and the Dynamics CRM system. The attendee information will directly send to the Dynamics CRM system. The event registration function is enabled by the user management plugin. The user account system is also helpful in eliminating the duplicate errors; clients will not be register with form but rather by their account. This function is enabled by the user management plugin provided in the WordPress plugin market.

However, this is currently a prototype so it has not yet been utilized in real event management. But the consultant and the community partner have tested this process several times and the community partner considers that this new system can save the money they spend on ABCSignUp while preserving most of the functions the organization needs, including event registration, event management and payment methods.

Before the prototype is fully implemented to the organization, the current system will keep on working so that there will be no absence of service for the organization.

With this new process, several benefits can be expected:

- Pam can save a lot of workload from detecting duplicate contact records and exporting/importing files. This work could have taken up to 15% of her work.

- The organization can trace their contacts more precisely.

- The organization can save about $1,500 per year on event management software.

Since this delivery is only a prototype, there will be many risks about sustainability:

- The organization may decide not to implement this because of human resource limitation or financial limitation.

- There can be new problem raised in implementing this system. New challenge can come out as this prototype scale up.

- The plugins of WordPress have a risk that the provider stops updating it.

# III. Make full utilize of the CRM software

## Motivation

The organization has migrated to the Microsoft Dynamics CRM software and a lot of functions provided by CRM are not well utilized. Currently the organization is using the CRM for contacts management and events recording.

It will be helpful if the organization can use the CRM for campaign, which is currently running on Constant Contact, Manually, and newsletter, which is operated on Constant Contact and cost $700 per year.

## Outcomes

Due to the plan change in middle of the project and the time constrain. This task is not done.

# IV. Remake the Organization Web-site

## Motivation

Currently the organization has its website donated by a local web service provider. The website is old and hard to maintain. Also the structure of the website is unorganized and the information is un-sorted. It is hard for potential customer to get information clearly from the website. Also this affects the image of the organization.

Apart from this, the company that hosts the organization's website is no longer in website hosting business. The support of the current website is not efficient enough for the organization's need.

The current website takes a lot of time for Sarah to maintain and the structure is getting more and more complex. A new website can help new customer to retrieve the information they need easier as well as being informed better about the programs provided by the organization.

## Outcomes

At first we considered to use Sharepoint to be the new website platform because the organization has a free license of it. But later during the implementation we found out that the complexity of the solution exceed our ability to implement. And the benefit of it does not repay the cost of doing it. Then we came back to search for other solutions, and the Wordpress platform turned out to be a good choice.

Due to the plan change and the time constrain. A prototype of the website rather than a well established website is created. The prototype is designed based on the Wordpress platform mentioned before and is hosted on Bluehost.com.

On this website, the theme and the plugins are created based on the organization's need. User management system and event management system is presented.

A list of potential webhosts is presented and the community partner can choose the webhost based on this list.

The prototype currently has these capabilities:

- Change the display of the website by changing themes and the media elements on the page, including pictures, slides, video and texts;

- User management system that allow customer to register as a "contributor". And allow the organization to perform access control to create contents that is only for registered users.

- Event management system that allow the organization to create, edit, manage events. A payment system will be enabled with the commercial version of the plug-in.

- Forms that will collect information and store it directly into the CRM system

# V. Recommendations

## A. Vision

If the new web-site plan is implemented, the organization can track their contacts more precisely.

Since the organization has a limited human resource as well as their limited knowledge of technology, a third party must be involved in to the maintenance of the system, or at least a technical support that can help the organization to solve problems when they have one. The Microsoft technical support they are seeking for help currently is a good choice.

## B. Goals

### Goal 1: Implement the WordPress-Dynamics CRM prototype
a. Background

In this project a prototype of WordPress website that is integrated with the dynamics CRM system is provided. In this prototype, data exchange is established between the WordPress website entry and the CRM database.

Due to the mistake in making decision upon platform early this semester, time

It is recommended that the organization can implement this prototype with the help with third party considering the limited human resource of the organization. Also, upon implementation, more issue can be expected including the security, technical support resource and the server maintenance.

b. Justification

Currently the organization is still mainly using ABCSignUp to get new contacts and events information. During the process a lot of duplicate problems can occur and making the organization hard to trace the individual contacts precisely and wasted plenty of time manually checking the duplicated records.

With the new system, the users are not expected to enter their personal information every time they register for an event. The personal information will be store in the CRM system as a contact and the registration process will query the data in the CRM system.

Also, the clients information are created as accounts on the website which correspondingly related to one record in the CRM system. The problem of duplicated records can be resolve. Also, with the account system many new features can be expected for the system, including customized campaign, user management.

With the new system, 15% of Pam's workload can be released and a cost of about $1,500, which is currently spent on the ABCSignUp, can be waived.

c. Strategies

There are several major steps needed to reach the goal:

1. Select a web host for the organization to host the website:

   To host the website, one can have a server running on-site of the organization or off-site on a server provided by a third party. Since the organization does not own its own server and considering the complexity of running a server as well as the limited staff of the organization. It is better to select a webhost to hold the organization's website.

   Following is the requirement of several main characteristic of the server:

| Metrics | Level | Reason |
| --- | --- | --- |
| Traffic | Low | It is not expected that a lot of traffic will be on the website. |
| Security | High | There will be personal information involve in the website. |
| Storage | Medium | At least 1500 accounts will be created and stored. |
| Stability | Medium | The organization does not require the website to be 24/365 available. However, you do want it to be accessible most of the time and running smoothly |
| Technical support | High | The organization does not have much knowledge about the webhosting so a good technical support is required |

2. Upload the website to the domain

This step may need third party's help since it does requires certain level of knowledge but not much. One possible solution is come back to the IT consulting course and the student can help a lot. Other alternative solution is to ask the technical support of the webhost for help. Many web hosting has its own technical support which is aim to help users to create their own website.

3. Make modifications due to the new domain.

Like the step above, this can also be solving as above.

d. Expected Outcomes

With the new system, no information is required to be input by hand. The data clients entered into the website entry will appear correspondingly in the dynamics CRM system. No more manually input will be needed.

Also, the clients information are created as accounts on the website which correspondingly related to one record in the CRM system. The problem of duplicated records can be resolve.

The complexity of the organization's IT structure will be simpler, since the new structure will be only website and the dynamics CRM system rather than Constant Contact, ABC SignUp and others.

e. Resources

The Wordpress Lessons: https://codex.wordpress.org/WordPress_Lessons

On this website, a lot of information need to implement a Wordpress Website is provided. Sarah can make good use of them to have an understanding to make a Wordpress website the way she wants.

The Lynda.com: http://www.lynda.com/?he=2

Lynda has a lot of tutorial videos that lead you into the Wordpress.

Wordpress for non-profits: http://vip.wordpress.com/spotlight/non-profit/

This is a program provided by Wordpress.org for non-profits. It contains some resources for non-profits users


### Goal 2: IT Budget

a. Background

Currently the organization does not have an IT budget in use. Have a budget set up specially for IT can help the organization to have more control of its IT structures.

b. Justification

Like other budgets, making a budget specially for IT can help the organization know more about the IT devices and service it has, how much it cost the organization for these services, is there anything need to be replaced or is no longer in use and how much we can afford for new services. The process of making a budget help Susan to have a more clear vision of all the money she spends on IT, so that she can avoid spending too much money on the services which is not currently functional or insufficient. Replacing legacy system to a new one and waiving services that are no longer useful can save substantial costs and time.

IT budgeting also helps the organization to make plans. Like computers, every 4-5 years the computer will be too old to support the new need of business. It will be a good idea to replace it, making a budget can make the organization inform of these and control the money more wisely.

c. Strategies

Several steps need to make it:

1. List out all the IT devices and services the organization has. Specially record the years of use of the device; the cost of maintenance/ rent and the status of usage (is it running well? Running too low of its capacity or too high)?

2. Summary the devices/service that need to be abandon because of the low usage/ high cost/ too old.

3. Summary the new devices/services to be acquired. Compare the total change and the need of the organization. Make adjustment based on the need of the organization

4. Reserve a certain amount of money for emergency if one of the device is broken/ one of the service is no longer provided/ not good enough for the organization's need and need to be replaced immediately.

5. Establish a periodically maintenance system, the organization shall periodically check the status of its devices, especially for the backup system to make sure it can run smoothly when the time needed.

6. Make the budget.

d. Expected Outcomes

Based on the scale of the organization, the budget does not need to be a really large one.

However, a small budget can also give the organization a deeper understanding of the structure it has, the devices and the services it has and is paying for. Do they all in use or the organization is wasting money on something that is not in use?

The outcomes can be:

1. Knowledge of the status of the IT devices and service acquired before.

2. Have IT devices and services evaluated periodically in order to maintain them or replace them

3. Control the spend on IT

4. Flexibility to IT emergency in finance.

e. Resources

How to make an IT budget: http://www.ehow.com/how_5209029_plan-budget.html
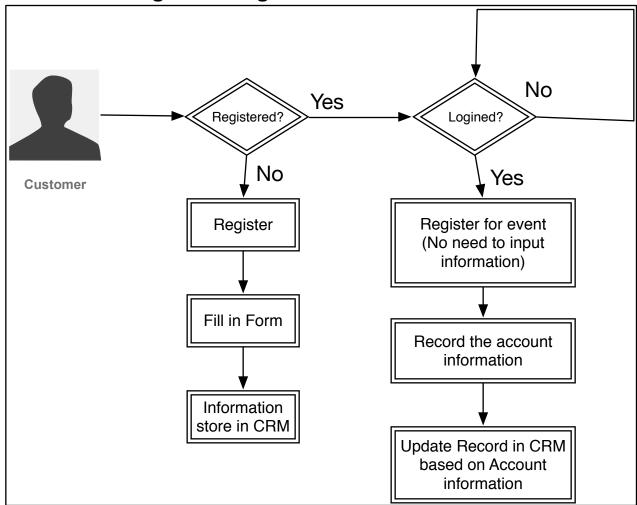
This blog give a general way of IT budgeting. This blog gives you an idea of the importance of each step concerning IT budgeting.

## About the Consultant

Jing Liu is a senior in Information Systems at Carnegie Mellon University. He will be graduating this May.
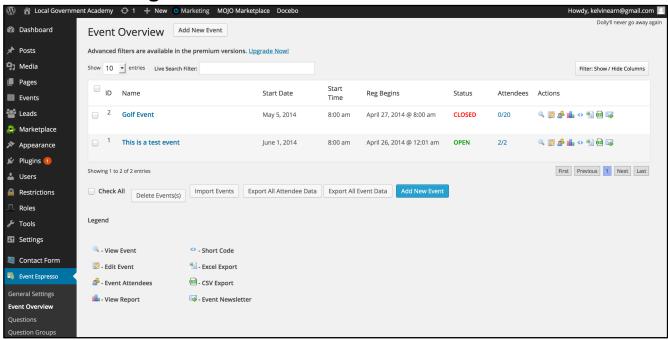
## Appendix
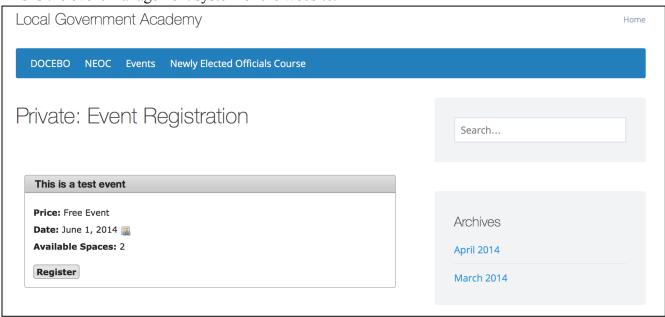# A. Process Diagram of register for an event



This is the process that a new customer registers for the events organized by the organization.

The customer is asked to register to the website at first, upon registration his/her personal information will be stored in the CRM system.

Later when the customer wants to register for an event, he/she does not need to input his/her information again.
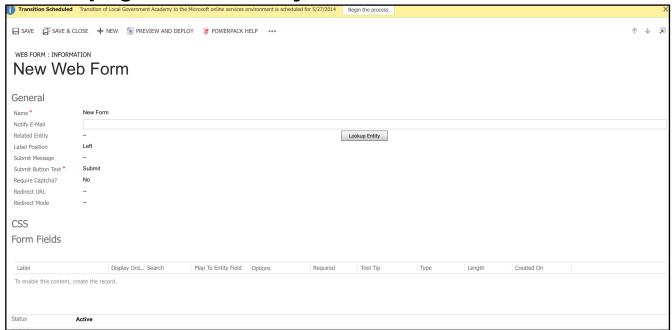
# B. Event Management UI



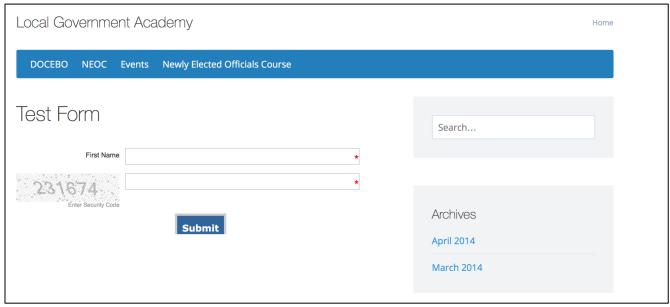This is the event management system of the website.



This is the screenshot of the event registration page.

# C. Form plug-in of the CRM system



This is the screen shot of creating a new form that can collect data from the form and store it directly into the CRM database.



This is a example form created for test, this form has only one slot that is the First Name. Upon submit this form will create a Lead object in the Dynamics CRM's Lead section.