



Technology Consulting in the Community

Spring 2013


ACTION-Housing

Diwei Jiang

Final Consulting Report

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

Carnegie Mellon University



Joseph S. Mertz, jr.
Associate Teaching Professor
H. John Heinz III College and
Dietrich College of Humanities & Social Sciences

Telephone: 412-268-2540

www.cmu.edu/tcinc
instructors@tcinc.org

ACTION-Housing

Executive Summary

Student Consultant, Diwei Jiang
Community Partner, Lena G. Andrews

I. About the Organization

ACTION-Housing Inc. is a nonprofit organization located in Pittsburgh area. It has about 110 employees, manages a variety of complex projects ranging from housing provision, supportive social service, to education and employment opportunities assistance.

The mission statement of ACTION-Housing is:

To empower people to build more secure and self-sufficient lives through the provision of decent, affordable housing, essential supportive services, asset building programs, and educational and employment opportunities.

The facilities and hardware supply in ACTION-Housing is very good, but the software is not advanced to support their current work. The major areas that need technology updates are transforming manual work to electronic way, enhancing organization communication and aligning workflow with technology planning. In the long term, the organization wants to have a uniformed technology package solution to align technology with the whole organization in a unified way.

II. Use Salesforce CRM Software to help CP manage client data

The consulting work focuses on the MyPlace program. It is a social service program that provides help to a homeless youth for two years, during which housing provision, employment and education assistance is provided. Before the consulting process, it was facing problems in entering and keeping track of data from their clients. Data reports were also needed to monitor client profile and the performance of the program.

A good CRM system was needed to support the program and the organization mission. Internally, CP needs the reports to see the overall performance of the youth care program. Externally, better data management and reports can be used to report to government and attract funding.

Expected results were databases and reports generator. Additional impact will influence the technology future of the whole organization, since other program will consider adopting Salesforce CRM after the success of MyPlace.

III. Outcomes

Student consultant and community partner worked together to help MyPlace to obtain a desired software implementation results. The accomplished outcomes for the whole consulting work are:

- Well implemented databases within Salesforce CRM software
- Automatic reports generator for program reviewing and analysis in Salesforce CRM

After the success of the consulting work and technology implementation, employees in ACTION-Housing become more familiar in leveraging technology to improve work efficiency and data integrity. This achievement triggers ACTION-Housing's interest in enacting technology plan and consulting to technology professionals to improve the technology in the whole organization.

Some of the major risks might be within the sustainability of the software package. A clear documentation on the business requirements, database structure plan, implementing steps and revision records is left to ACTION-Housing to help future decision-making process. Some new challenges in security access and license sharing may occur when employee size and program expand. Work process change may also incur significant software modification. They might rely on volunteer consultant- AJ, or Salesforce consulting service and consulting professionals to further assist the customization. (Further details is in the final report)

IV. Recommendations

The future of ACTION-Housing should be one that successfully utilizes technology to help it to facilitate knowledge sharing, employee communication and information management. In order to achieve this new vision, student consultant has the following suggested goals:

- **Goal 1:** Enhance knowledge sharing and data storage by adopting online file system – Google Doc
- **Goal 2:** Facilitate internal communication by adopting chatting system – Salesforce Chatter
- **Goal 3:** Align all departments with technology - Salesforce CRM software

A detailed analysis is presented in the following final consulting report.

Community Partner

Lena G. Andrews
ACTION-Housing
Community Engagement department
425 Sixth Avenue, 9th Floor
<http://www.actionhousing.org>

About the Consultant

Diwei Jiang Student
djiang@andrew.cmu.edu
Master in Information System Mangement
She will begin working as a web developer intern
for Priceline.com this summer.

ACTION-Housing

Final Consulting Report

Student Consultant, Diwei Jiang
Community Partner, Lena G. Andrews

I. About the Organization

Organization

ACTION-Housing Inc. is a nonprofit organization located in Pittsburgh area that helps needed people to build more sufficient life through their various programs. The organization, which has about 110 employees, manages a variety of complex projects ranging from housing provision, supportive social service, to education and employment opportunities assistance.

The mission statement of ACTION-Housing is:

To empower people to build more secure and self-sufficient lives through the provision of decent, affordable housing, essential supportive services, asset building programs, and educational and employment opportunities.

The problem facing the organization is that the software is not advanced in a way that can support their work. For example, an opportunity is to create a customized appliance to help the organization to manage all the client information electronically rather than manually. In the long term, the organization wants to have a uniformed technology plan, which carefully integrates technology packages into every program.

Facilities

The office of ACTION-Housing is located in Downtown Pittsburgh on Sixth Avenue. The office occupies the whole floor of a Commercial Plaza.

The facilities situation is very good. The office is secured because there are both security person in the entrance of building and the office recording visitor information. The size of the office is satisfactory that it has the space of a whole floor. Lighting, heating and power conditions are also very good. Employees' working space is satisfactory since most of them have individual office rooms or two people share one room. Inside the offices, furniture and equipment are well supplied and in good conditions.

Programs

There are a lot of programs going on in the organization. Some of them have been running for years and others have just started. It has many programs – from developing affordable and supportive housing, providing weatherization services for low-income people, doing foreclosure and financial counseling, to property management. The consultant's work, which belongs to the Essential

Supportive Services, focuses on is the only social service program that helps homeless youth to be successful in life and career.

Major programs:

- Essential Supportive Services:

This program targets youth aging out of the foster care system that are homeless or at risk of becoming homeless. At request of Allegheny County Department of Human Services, ACTION-Housing agreed to explore the design and implementation of a “housing first” model for addressing the critical needs of this particular youth population.

- Energy Conservation and Green Building programs:

These programs are helping to reduce energy and water consumption, lower costs, and create a safer environment for Western Pennsylvanians, even as utility costs continue to account for a large share of household monthly budgets. They provide safe, sustainable building materials and promote green behaviors in the communities they serve and the homes they assist and manage.

- Supportive Housing Management Services:

ACTION-Housing started Supportive Housing Management Services (SHMS) to support the mission via having a direct role in the physical management of the growing portfolio of properties, and the need to ensure a better delivery system of supportive services to enrich the lives of its residents. Today, SHMS is a full service management company.

Staff

There are about 100 full time employees and 6 part time employees in the organization. Daily work in this program involves a mix of work on papers and on computers. All of employees have access to computers, printers and other technology infrastructures.

My consulting work focuses on a program called MySpace, which provides transitional housing for homeless youth. There are three case managers and a director in this program. Case managers manage client information, provide one-on-one case management services and help the youth build self-sufficiency and independent living skills. The training on converting paper records to database, familiarization with configuration of case management software will be helpful.

Technology Infrastructure

The office has a good technology infrastructure basis. Every desk is equipped with a computer and the Internet speed is fast. The operating system is Microsoft Windows 8. Employees are able to use basic office software such as Microsoft Excel and Word, etc.

Technology Management

There is one part-time IT staff in the organization. When the employees run into technology problems, she is the one to go to. She is also able to perform software update, data backup and update virus definition.

The websites and software are outsourced to an external IT company called CIVA, which is also the one to go to when they have tougher technical problems. Their current company website and the old database system in the MyPlace program is the work of CIVA.

Technology Planning

In ACTION-Housing, the management committee makes decisions upon important technology issues. Every department could report problems and opportunities to the committee. But there is no technology department responsible for making technology plans. However, they need technology upgrade but they do not have expert who is familiar with technology and able to provide a solution.

Concerning other programs and department, there are a list of problems that suggest a need for technology planning. Some items from the wish list are: A conference room scheduling system could be created to replace manual scheduling work. Implementing information system which will track donor funds. A better electronic way that will help project managers to communicate with accounting department.

Internal Communication

Within the organization, the most common way of communication is by face-to-face communication, by email and by phone. The difficulty in communication is that since every employee is recording and updating client information in their individual computers, they cannot share and keep track of information quickly.

Externally, employees use face-to-face communication, phone calls and text messages most of the time. By far, this way of communicating with clients does not meet any obstacles. Social websites and external communications tools are not used currently.

Information Management

The information in the organization is mostly done by paper, or by Microsoft Word documents. So the information is sparsely recorded and there is no uniformed electronic collection of data.

Donor and client information are critical to the organization. In MyPlace program, the client information and case information are important. Right now, the information is recorded in paper dossiers and by Microsoft Word documents. The old database system is once used but now abandoned because of dis-functionality. The old system has a complex user interface, hazard all the entering fields and is not pushing out any useful reports to the program.

Business Systems

There is financial software in Accounting Department and it can handle the accounting jobs by far. The board makes decisions upon what projects to build and if they support the mission of the organization. When the grant comes, the accounting manages it and assign to projects.

The other program, Green Building program, is using Salesforce CRM software to help managing data and work activities. The rest of the organization does not use business system.

II. Use Salesforce CRM Software to help CP manage client data

MyPlace is a social service program that provides help to a homeless youth for two years, during which housing provision, employment and education assistance is provided. The program can hold around 60 clients simultaneously. Before the consulting process, it was facing problems in entering and keeping track of data from their clients. In addition, there were no data reports, which would be useful in presenting the overall performance of the program. The dis-functional old system was abandoned since it could not satisfy the program needs.

A good CRM system was needed to support the program and the organization mission. Internally, CP needs the reports to see the overall performance of the youth care program. If the program can have better management for client information, case managers will take better care of the youth. Externally, Allegheny County also needs reports, other funders like the United Way, need reports. If the government and other sponsors can see the performance of the program, the funding may be enhanced, more youth may be helped in the future.

The data MyPlace wants to record electronically includes five categories: client demographic, contract, employment, education and case notes information. Besides, reports on race and gender ratio, disabled clients ratio, wage progress, education progress are needed. Demographic information is recorded at client entry and exit, education is recorded when client accomplishes certificate or training, employment and case notes are updated frequently and could be multiple times per day or per week.

In the initial stage, consultant and community partner worked together to analyze business requirements and design the database. In the implementation stage, the consultant worked on the prototype of database since community partners all come from non-technical background. After the prototype, student and case manager combined effort to revise the database. In the report mechanism, consultant motivated employees in the organization to learn how to generate report and make the technology package sustainable.

Expected results were databases and reports generator. Additional impact will influence the technology future of the whole organization, since other program will consider adopting Salesforce CRM after the success of MyPlace.

III. Outcomes

The accomplished outcomes for the whole consulting work are a functional database and report mechanism within SalesForce CRM software for ACTION- Housing MyPlace program.

Consulting approach summary:

Gather business requirements -> Provide possible solutions -> Select the best solutions -> Gather detailed database requirements -> Enact database plan -> Modify database design -> Implement CRM -> modify CRM-> Test CRM ->modify CRM-> Provide technology training

Important features for the new tool:

- CP (CP stands for Community Partner – ACTION-Housing in this document) uses the new CRM system to store, update and manage client data. They have already migrated some previous records into the new system. The data includes their client demographic information, employment and education information, medical insurance, applicant history records, lease information and case notes.
- CP uses system reports function to generate periodic reports upon data stored in the system, including race ratio, wage increase, employment/unemployment ratio, youth progress reports, etc.

Detailed steps and observable changes in each process:

- Had a meeting with person in development department and case manager in the MyPlace program. Together we reviewed the defects of their old CRM system and gather the requirements for the new CRM system. (See Appendix A)
- CP showed me the documents recording current data from clients: including printed forms, pictures, photocopied lease information, word and excel documents stored on computer hardware.
- Met with employee who is already using SalesForce in the GreenBuilding program, reviewed the layout, database structure.
- Requested former implementation reports from GreenBuilding program and the contact information of AJ, a volunteer consultant who helped them configured the system. These documentation was helpful for tutoring me on how to start implementation.
- Held a phone conference with the volunteer SalesForce consultant AJ who has helped the GreenBuilding program implement the CRM system. Solicited from her some ideas on how to create objects, relationships and customize reports in Salesforce software.
- Handed over the initial database plan details to CP. CP made modifications and suggestions on the first database plan draft. (See Appendix B)
- Composed the second database plan based on first draft and CP feedback. (See Appendix C)
- Established the first prototype based on the second database structure. Hand over the database to CP and requested feedback. (See Appendix D)
- CP gave suggestions on modifications towards the first prototype and gave a documentation of feedback.
- I revised the database based on CP comments and established a revised prototype.

- CP and student consultant added mock data into the system together. (See Appendix E)
- CP and student consultant made further modification in the testing cycle and added reports generator, which can monitor program performance. (See Appendix F)

New understanding form CP

- They have more understanding in database via giving feedback on my database plan. (see appendix)
- They obtained experience in how to use technology to help their program achieve best results through participating in the test cycle.

Top level outcomes

Time saved:

CP used to store client data on papers, printed forms, and disperse electronic files . There is some observable improvement on time: for example, when they search a certain applicant information, they used to spend more than 15 minutes to search through all the files of application records. Now they only need to type in the search term on the CRM software and it only take a few seconds.

Simplified procedures:

They used to find lease information by requesting the printed forms and search through every existing file on record. So they have to check whether a lease should be paid frequently so that they do not miss a deadline. But now the alert mechanism reduces them the repetitive work from manual checking the lease status.

Better performance management:

CP will have a dashboard view for all the data they have collected in the CRM. For example, they used to manually count ratio of youth wage increase through out the system, now they could just automatically review this through the customized report mechanism. Furthermore, CP could present better reports for government to attract for further funding.

Sustainability

The outcome could be sustained within the range of issues that have been covered in the consulting work. Student consultant left a clear documentation on the business requirements, database structure plan, implementing steps and revision records.

The documentation shows in detail on how we first gathered requirement from ACTION-Housing, CP's ideas on the future database and implementation details. CP reviewed and did practice on implementing the database so when the client needs to make minor modification, they could be able to do configuration on them own. If they have to make big changes in the future, they could hire an external consultant and deliver my documentation to the future consultant. The future consultants would be able to see how we made decisions based on my documentation to help their future

modification work.

In the future, if they run into new problems that we have never encountered in the consulting work, they could not rely on documentation to be sustainable. Some new challenges could be security access problem: Since there are only 3 case managers in the program, assigning access would be easy. But in the future, if the employee size increase and other programs are sharing the licenses, they need to enhance security. Another potential problem is that the work process in MyPlace might change so the database would have to be modified abundantly to meet the new process flow. At that time, they might rely on volunteer consultant (named AJ, who has been helping with CRM issues in ACTION-Housing for several months), or Salesforce consulting service (http://www.salesforce.com/services-training/training_certification/).

New Vision

This result has at least two visions: One is to enlighten other departments to imitate and customize the Salesforce CRM to satisfy their needs. The second is that the chatting functions in the Salesforce could be able to foster members to communicate with each other online and offline. Although we have not included this as a consulting task but CP could later use the chatting function since it is an in-built function in Salesforce.

IV. Recommendations

.Vision

The future of ACTION-Housing should be one that successfully utilizes technology to help it to facilitate knowledge sharing, employee communication and information management. In the long term, the organization should have strong business-driven technology capabilities due to continuous efforts. In order to attain this vision, the following goals are recommended to help ACTION-Housing:

- **Goal 1:** Enhance knowledge sharing and data storage by adopting online file system – Google Doc
- **Goal 2:** Facilitate internal communication by adopting chatting system – Salesforce Chatter
- **Goal 3:** Align all departments with technology - Salesforce CRM software

If ACTION-Housing accomplishes the above goals, it will attain the following benefits: Employees could share knowledge using online file system, which facilitates the knowledge sharing process and guarantees data integrity. Meanwhile, adopting an instant messaging chat system allow employees communicate with each other without constraint of time and space. The software could also nurture a sense of community by bringing the organization body more cohesive. Finally, a long-term goal is to integrate technology into every program and department. Business system, which combines technology and work activities, will support the organization's operation, management and decision-making.

The following passages provide detailed analysis and implementation strategies for each recommendation, as well as the reasons why the listed tools are selected from others.

Goal 1. Enhance knowledge sharing by adopting Google Drive

The current way in Action-Housing when they are sharing files needs to be optimized. For example, when case manager in MyPlace program wants to see the lease information, which is recorded by another case manager, she would find the person, ask her to send the latest file to her and print it out. Place to centralize up-to-date files is strongly needed to reduce inconvenience and low efficiency.

Benefit

- Collaborative efforts. Optimized knowledge sharing procedure by collaborative files updates.
- Enhance data integrity. All users will immediately see the most updated information, this will reduce errors that may occur when there is a delay for updates delivery.
- Data security. The files are stored on server side, which prevents data loss from client side.

Implementation strategies

- The steps would be easy and the pre-requisite is that every employee has a Google account.
- Visit <http://drive.google.com>, download and install Google Drive.
- Open the installed application and enter Google account.
- The distributor establishes a file folder, and synchronizes with Google Drive.
- The manager could share the link to people who can have access to the file. However, there should be one people managing and maintain the Google doc folders. This person could be the program manager, manager assistant or someone who is most familiar with document content and program workflow.

Outcomes

- **Organization:** The whole organization could have one Google drive folder that every member of the organization could see.
- **Program:** Administrators could also assign separate Google Drive, which could only be seen by people in the same department of program.
- **Staff:** The outcome of the action would be that people who need the information would have direct access to the files instead of asking other people about the information. People involved in the knowledge sharing process will be able to update files collaboratively.
- **Technology environment:** Since files are stored on server side, there is no danger for data loss.

Alternative tools or methods

The most competitive alternative that helps knowledge sharing is Dropbox.

	Google Doc	Dropbox
Cost	10 GB free storage limit, pricing over 10GB: https://support.google.com/drive/bin/answer.py?hl=en&answer=2375123	Zero cost up to 18GB, but extra cost is needed to expand storage, more information: https://www.dropbox.com/pricing
Supporting file formats	Supports ODF, HTML, PDF, RTF, Text, Office Open	Since it works like a hard disk but based online, it support any format of

	XML, .xsl, .doc, .ppt.	files.
Easiness to use and update	Very easy to use in creating files. Allows direct and collaborate editing to the document.	Very easy to upload files. Has to overwrite previous files by delete the older file first then upload the new one.
Security	Files stored on server side, Google Drive links Google Account with the files, two authentication steps are needed besides username and password.	Files stored on server side, user needs only username and password to access files in Dropbox.
Final comments	If the user does not exceed the storage limit, both tools are free to use. Dropbox supports more formats while Google Doc is extremely easy to use with Microsoft Office formats. Google Doc is more secured than Dropbox. Google Doc is easier to update and edit collaboratively. ACTION-Housing evolves more with Microsoft Office files and has needs in updating files frequently, so Google Doc would be more suitable. It can choose to use a combination of the two as well.	

Goal 2. Enhance internal communication by adopting chatting system

The current ways of communication among employees are face-to-face and email. Employees and people outside the organization could encounter long response time if a person is out of office, these ways result in long time for waiting to be responded. A way to process communication and information delivery without limited time and space is needed.

Since the organization has already adopted Salesforce, it makes sense to further explore the instant message function Chatter in this CRM software. There is no further cost for using the Chatter functions. There is even mobile app for salesforce, which further supports effective real-time communication with location flexibility: <http://www.salesforce.com/mobile/apps/>

Benefit

- Blending into the same context with all work activities. The Chatter could be especially handy when employees are discussing data, generating reports and sharing files in Salesforce within the same environment.
- Mobile app of the chatter will allow users to further use this function with flexibility in time and location.
- A sense of community is nurtured. Like Twitter, user could follow other users so that they could see the activities and news from other people. This part of chatter could enhance interaction and cohesion in the organization.

Implementation Strategy

Steps are simple, since this is a built-in function. We do not need further customization and configuration to this function.

- The pre-requisite of the action would be that everyone has an account for Salesforce.
- Click the Chatter tab in the menu, employees could add each other as friend, manager can establish taskforce group, members could share files.
- Employees should download the mobile app if their phone can support the current versions through: <http://www.salesforce.com/mobile/apps/download/>

However, motivating employees to move from the previous ways to adopt the new technology is pivotal to the success of the goal. Situations such as reluctance to use the software or doubt to use the new technology may occur if the motivation process is not handled well. The implementation result will be satisfactory following the steps below:

- Explain the bonus of new technology - Chatter will benefit the work process and communication efficiency. Give specific example why they should use Chatter.
- Instruct and motivate every employee. The result would be best in a top-down way if top managers initiate actions towards new technology and motivate subordinates to use it as well.
- Enforcing new change. Enforce some actions, such as posting public announcement and updates on Chatter. Mandatorily notify employees to frequently visit the Chatter function.
- Divide employees to into small teams to facilitate a comfortable learning environment to adopt new technology. The groups are actually divided very naturally by different programs.

Outcomes

- **Organization:** One uniformed way of communication and a sense of community and cohesion are nurtured at ACTION-Housing via the twitter-like function and instant message tools.
- **Program:** People on the same program will be more productive since they will face less response time and more reliable information after breaking the barriers of distance and time.
- **Staff:** The Chatter improves productivity through breaking distance and time.
- **Technology environment:** Create an environment that employee has more reliance on technology to facilitate work.

Alternative tools or methods

There are alternatives, such as MSN, Google gTalk, etc. But these two alternatives do not have the advantage of Salesforce, which provides the same environment for work procedure and communication. There is no need to change to another software while employees are working on inputting data, running reports. Hence, the Salesforce Chatter would be the most appropriate one in a uniformed way of performing work activities.

Goal 3. Align all departments with Salesforce CRM.

Currently, only two programs: Green Building and MyPlace are using information systems to help working procedure in the whole organization. The community partner expressed a concern that technology is not advanced in ways to help support the work. ACTION-Housing are facing technology puzzles in several areas: such as electronically recording timesheets, track foundation grants, communicate between departments, resource scheduling system.

Technology plan and implementation are needed to update the technical environment in ACTION-Housing. If every department could align itself with the same CRM as the Green Building and MyPlace, the organization would be very cohesive and coherent in processing workflow and activities. Salesforce software is very powerful and contains unexplored functions besides data management, and these functions are able to solve the technology dilemma facing ACTION-Housing.

Benefit

- Discount price from Salesforce for non-profit organization.
More information: <http://www.salesforcefoundation.org/products>
It offers first 10 licenses free. For further licenses, it offers a discount price at \$30/month for Enterprise Edition, \$30/month for Enterprise Edition + Nonprofit Starter Pack App, \$60/month for Unlimited Edition.
- Guarantee data integrity. All the data will be stored in the CRM database and the database allows dependency check and validation check that will reduce errors. All people working on the same taskforce or long-term project are accessible to the same data directly.
- Enhance work efficiency. Online CRM software shrinks time in information searching. For example, when a case manager used to search the applicant history for MyPlace program, it took 20 minutes, but now it takes less than 1 minute. When a case manager is reviewing unpaid lease and contract information, she repeats this action everyday, but now the alert function can automatically notify her.
- Analytic functions used for monitoring and attracting funding. Through generated automatically to monitor each program's real-time performance, reports could be used internally for review and summary, as well as externally to exhibit performance to attract more funding and support. For example, MyPlace program is using the report function to generate Race Ratio report, Employment Rate report and Wage Progress Report etc. automatically. It replaces the previous manual statistic calculation. And the reports will be shown to sponsors to state the program operation status.

Implementation steps

The first step would be to board organization approve the plan. Since ACTION-Housing does not have a full-time technology person. It is needed to find a professional technology consultant.

	Option 1: Using Salesforce consultant service	Option 2: Seeking candidate introduced by acquaintance	Option 3: Seeking candidate from consulting firms
Resource:	It can also seek consulting service from salesforce through: http://www.salesforce.com/services-training/professional-services/	The organization could consult the volunteer Salesforce consultant AJ, who helped them configure the first Salesforce in the GreenBuilding program. She is able to introduce potential consultant in her professional network.	It can seek potential candidate from consulting firms in Pittsburgh area. Useful links: http://www.consultingcase101.com/forum/Thread-List-of-consulting-firms-in-Pittsburgh-Pennsylvania-USA
Advantage of	The biggest advantage is that	The advantage for this	Hiring a consultant

each option:	consultants are certified Salesforce CRM solutions with the functions of the CRM. Their experiences are based on a rich number of implementations.	approach is that the selection process would be more personal than the other two. With an acquaintance as the bridge, the communication and negotiation will be easy.	from consulting firms, the advantage is that the consultant is very flexible in adapting solutions, diagnosing organization problems and open to alternatives.
Cost:	The official website: http://www.salesforce.com/ap/services-training/professional-services/custom/ Does not disclose price details and the price will be made upon needs.	Depends on this particular person. But a common price on the market is \$25-\$150/hour.	Salesforce consultant rates and fees vary by the type of work. A common price ranges from \$25-\$150/hour.

After hiring the consultant, the organization and the consultant should research organization workflow, diagnose problems, explore technology needs, enact multiple potential package solutions, make decisions on choosing solutions, make concrete plans and implement solution. All of the above steps should be a collaborate effort between the consultant and ACTION-Housing in order to be sustainable. When the implementation or a prototype is finished, ACTION-Housing and the consultant should begin the test cycle. Further modifications are very likely to happen in this stage to guarantee that the software is best tailored to ACTION-Housing's needs.

Outcomes

- **Organization:** Data are managed and accessed through the organization all in one place. The CRM software solution and integration provide the organization an unified way to
- **Program:** Internally, each program can measure and share performance with real-time analytics. Externally, it also becomes easy for different program to communicate with each other since all the management is done within the same context. Besides, top managers in the organization are able to compare and summarize different program performance, report performance data to sponsors within the same technology tool.
- **Staff:** Employees can work more collaboratively. Salesforce provides a place where individuals could access and update data, run reports and communicate each other.
- **Technology environment:** Create business-driven technology environment for employees to facilitate work. The Salesforce CRM is easy to use for non-technical people and flexible in customization.

About the Consultant

Diwei Jiang is a master student in Information Systems Management at Carnegie Mellon University. She came to CMU in August, 2012 and will be graduating December, 2013. She will be social media/web developer intern this summer at Priceline.com. She is passionate about a career related with web development, online marketing and business strategic planning.

Appendices (A - F)

A. data requirements from CP (CP)

Contract 1: 20 spaces Contract 2: 14 spaces Contract 3: 25

Apartment Address, contract #, Price, Landlord Name, Contact Information, Lease Start, Lease End, Renewal policy, Termination Policy, Notes - - - Alert for upcoming lease renewals
Referral name, date referred, accepted/denied, date denied, reason

First name, middle name, last name, DOB, Race, Phone Number, Email, M/F, Address

Living Situation at entry, Living Situation at exit (market rate renter, subsidized renter, section 8 renter, homeless, living with family/friends permanently, shelter, other-note)

Employment, Fulltime/Part Time, Wage Earned

Education, GED, High School Diploma, Bachelors, Vocational Training, Other-text

Medically insured? Yes-No

Mental Health disability (text), Physical disability (text)

Case Notes

Discharge summary note

discharge date, address, phone number, employed?, income at exit?, DPW assistance? (Text), medically insured?

Reports we would need:

Who is employed vs. unemployed

How many youth in the program increased their earning wages while in the program

Who advanced their education while in MyPlace program

How many youth were denied and for what reason

Race and gender profile

Disabled client - # with physical disability, # with mental health disability

Side by side comparison (snapshot of when they came in vs. snapshot of when they exited).

B. Initial database plan draft from student consultant and CP comments

Contract (master relationship with Client object):

Contract#

Link to client and will keep latest record of how many clients on the contract.

Lease:

Lease#
Client#
Apartment Address
contract #
Price
Landlord Name
Contact Information
Lease Start
Lease End
Renewal policy
Termination Policy
Notes

Client (Master object of Employment and Education):

client#
First name
middle name
last name
suffix
Date of Birth
Race
Phone
Email
Gender
address
zipcode
Living Situation at entry
Living Situation at exit (market rate renter, subsidized renter, section 8 renter, homeless, living with family/friends permanently, shelter, other-note)
market rate renter
subsidized renter
Contract#
Medically insured? Yes-No
Mental Health disability (text)

Physical disability (text)
Youth employment (Look up Client object)
client# (lookup field)
Employer Earned
Fulltime/Part Time
Wage
Earned
Notes

Youth education (Look up Client object)
client# (lookup field)
Education
GED
High School Diploma
Bachelors
Vocational Training
Other-text

Case Notes (Is this related with a client accordingly?)
note#
Client id
Discharge summary note
medically insured?
discharge date
address
zipcode
Phone number
employed?
income at exit?
DPW assistance?

CP comments on the first draft of database design:

1. Need to add what utilities we are responsible for. Could be a check box or drop down
 - a. Electric, gas, water, sewage, trash removal
2. These are all sort of one thing – living situation at exit could be a marker rate renter, subsidized renter, section 8, shelter, living with family/friends permanently, unknown
3. Delete “Earned”
4. Add date employed, date terminated
5. Reason left employment
6. Wage and Earned should be one field
7. Will we be able to add additional employment to track wages earned throughout two years in program?
8. Will this be a drop down menu? We want to capture education at entry and education enrolled in throughout the program then education at exit. However this could be captured, as long as we can.
9. This information would want to be captured when they leave the program. A discharge summary note is when they are leaving the program and we summarize their involvement in the program – this would only be one note
10. We need a place to have continual notes that are ongoing with the client for 2 years. Every time we have contact with the client through phone, email, text messages or in person we have to document it. We would need something that can have a high volume of case notes per client
11. We would need to add “Program Entry Date” under client information

C. Revised version for database plan

March 29, revise 1

Diwei

Contract (master relationship with Client object):

Link to client and will keep latest record of how many clients on the contract.

Label	Type	comments
Contract	Dropdownlist	Contract 1,2,3s
Contract Information	Text	

Lease:

Label	Type	comments
Lease#	number	
Client#	Number	
Apartment Address	Text	
leasecontract #	Number	
Price	Number	
Landlord Name	Text	
Contact Information	Text	
Lease Start	Date	
Lease End	Date	
Renewal policy	Text	
Termination Policy	Text	
Notes	Text	
Electric	Checkbox	
Gas	Checkbox	
Water	Checkbox	
Sewage	Checkbox	
Trash removal	Checkbox	

Client (Master object of Employment and Education):

Label	Type	comments
client#	Number	
EntryDate	Date	
First name	Text	
middle name	Text	
last name	Text	
Suffix	Text	
Date of Birth	Date	
Race	Checkbox	
Phone	phone	
Email	Text	
Gender	Checkbox	
address	Text	

zipcode	Text	
Living Situation at entry	Textarea	
Living Situation at exit	Textarea	
Contract#	Number	Look up Contract
Medically insured? Yes-No	Checkbox	
Mental Health disability (text)	Text	
Physical disability (text)	text	

Youth employment (Look up Client object)

Label	Type	comments
client#	Number	Lookup from client
Employer	Text	
Fulltime/Part Time	Checkbox	
Wage	Number	
ReasonLeft	Text	
Notes	textarea	

Youth education (Look up Client object)

Label	Type	comments
client#	Number	Look from client
Education	Dropdownlist	GED, High School Diploma, Bachelors, Vocational Training
EducationInstitute	Text	

Case Notes [Discharge]

Label	Type	comments
note#	Number	
Client id	Number	Look up client
Discharge summary note	Textarea	
medically insured?	Checkbox	
discharge date	date	
Phone number	Phone	
employed?	Checkbox	
income at exit?	Number	
DPW assistance?	text	

Case Notes [Continual]

Label	Type	comments
note#	Number	
Client id	Number	Look up client
Contactway	Checkbox	Meet,Phone,text,email
Notes	textarea	

D. Screenshots of database

Client:

Custom Fields & Relationships					
		New	Field Dependencies	Custom Fields & Relationships Help ?	
Action	Field Label	API Name	Data Type	Controlling Field	Modified By
Edit Del	Address	Address__c	Text(100)		Diwei Jiang, 3/29/2013 10:56 PM
Edit Del	Date of Birth	Date_of_Birth__c	Date		Diwei Jiang, 4/23/2013 3:51 PM
Edit Del	Disability Status	Disability_Status__c	Text(100)		Diwei Jiang, 4/23/2013 3:59 PM
Edit Del	Email	Email__c	Email		Diwei Jiang, 3/29/2013 10:55 PM
Edit Del Replace	Employed?	Employed__c	Picklist		Diwei Jiang, 4/29/2013 8:36 PM
Edit Del	Entry Date	Entry_Date__c	Date		Diwei Jiang, 3/29/2013 9:54 PM
Edit Del	First Name	First_Name__c	Text(20)		Diwei Jiang, 3/29/2013 9:52 PM
Edit Del Replace	Gender	Gender__c	Picklist		Diwei Jiang, 3/29/2013 10:56 PM
Edit Del	Health Insurance?	Health_Insurance__c	Checkbox		Diwei Jiang, 4/23/2013 3:58 PM
Edit Del	Last Name	Last_Name__c	Text(20)		Diwei Jiang, 3/29/2013 9:53 PM
Edit Del	Living Situation at Entry	Living_Situation_at_Entry__c	Text Area(255)		Diwei Jiang, 3/29/2013 10:58 PM
Edit Del	Living Situation at Exit	Living_Situation_at_Exit__c	Text Area(255)		Diwei Jiang, 3/29/2013 10:58 PM
Edit Del	Middle Name	Middle_Name__c	Text(20)		Diwei Jiang, 3/29/2013 9:53 PM
Edit Del	MyPlace Contract	MyPlace_Contract__c	Lookup(MyPlace Contract)		Diwei Jiang, 3/29/2013 11:01 PM
Edit Del	Phone	Phone__c	Phone		Diwei Jiang, 3/29/2013 10:54 PM
Edit Del Replace	Race	Race__c	Picklist		Diwei Jiang, 3/29/2013 9:58 PM
Edit Del	Suffix	Suffix__c	Text(20)		Diwei Jiang, 3/29/2013 9:54 PM
Edit Del	Zipcode	Zipcode__c	Text(5)		Diwei Jiang, 3/29/2013 10:57 PM

Education:


Custom Fields & Relationships					
		New	Field Dependencies	Custom Fields & Relationships Help ?	
Action	Field Label	API Name	Data Type	Controlling Field	Modified By
Edit Del	Client	Client__c	Lookup(Client)		Diwei Jiang, 3/29/2013 11:05 PM
Edit Del	Description	Description__c	Text(100)		Diwei Jiang, 4/23/2013 4:02 PM
Edit Del	Education Institute	Education_Institute__c	Text(100)		Diwei Jiang, 3/29/2013 11:06 PM
Edit Del Replace	Education Type	Education_Type__c	Picklist		Diwei Jiang, 3/29/2013 11:07 PM
Edit Del	End Date	End_Date__c	Date		Diwei Jiang, 4/13/2013 4:22 PM
Edit Del	Start Date	Start_Date__c	Date		Diwei Jiang, 4/13/2013 4:22 PM

Employment:

Custom Fields & Relationships					
		New	Field Dependencies	Custom Fields & Relationships Help ?	
Action	Field Label	API Name	Data Type	Controlling Field	Modified By
Edit Del	Client	Client__c	Lookup(Client)		Diwei Jiang, 3/29/2013 11:08 PM
Edit Del	Employer	Employer__c	Text(100)		Diwei Jiang, 3/29/2013 11:10 PM
Edit Del	End Time	End_Time__c	Date		Diwei Jiang, 3/29/2013 11:11 PM
Edit Del Replace	Job type	Job_type__c	Picklist		Diwei Jiang, 3/29/2013 11:11 PM
Edit Del	Notes	Notes__c	Text Area(255)		Diwei Jiang, 3/29/2013 11:13 PM
Edit Del	Position	Position__c	Text(25)		Diwei Jiang, 4/26/2013 1:59 PM
Edit Del	Reason left	Reason_left__c	Text(100)		Diwei Jiang, 3/29/2013 11:13 PM
Edit Del	Start time	Start_time__c	Date		Diwei Jiang, 3/29/2013 11:10 PM
Edit Del	Wage	Wage__c	Number(16, 2)		Diwei Jiang, 4/26/2013 2:00 PM

E. Added mock client data to database

Recent Client		New
Client Name		
Ada Smith		
Mark Smith		
Jane Brown		
Brad Bradley		
Jane Taylor		
Alicia Drew		
Brandon Roger		

Client Detail		Edit	Delete	Clone
Client Name	Mark Smith	Owner  Diwei Jiang [Change]		
First Name	Mark			
Middle Name				
Last Name	Smith			
Suffix				
Entry Date	4/17/2013			
Date of Birth	4/2/1978			
Race	White			
Phone	(412) 222-5555			
Email				
Gender	Male			
Address	5000 a street			
Zipcode	15201			
Living Situation at Entry	homeless - living n a shelter			
Living Situation at Exit				
MyPlace Contract				
Health Insurance?	<input checked="" type="checkbox"/>			
Disability Status	n/a			
Employed?	No			
Created By	Diwei Jiang , 4/19/2013 2:42 PM	Last Modified By Diwei Jiang , 5/1/2013 2:51 PM		
		Edit	Delete	Clone

Education		New Education
Action	Youth Education Name	
Edit Del	Pitt	

Employment		New Employment
Action	Youth Employment Name	
Edit Del	McDonalds	
Edit Del	UPMC	
Edit Del	unemployed	
Edit Del	action'	

Finalnote		New Finalnote
No records to display		

CaseNotes		New CaseNotes
Action	CaseNotes Name	
Edit Del	4.25.13	
Edit Del	4.26.2013	

F. Reports

Wage progress of clients, clients may change jobs very frequently, the report keeps track of how they progress in MyPlace :

Run Report ▾ Hide Details Customize Save Save As Delete Printable View Export Details

Employer	Wage	Start time ↑	End Time
<input type="checkbox"/> Client: Client Name: Ada Smith (1 record)			
McDonalds	7.25	2/5/2010	-
<input type="checkbox"/> Client: Client Name: Alicia Drew (2 records)			
Hotel	10.25	2/6/2013	4/19/2013
Wendy's	7.50	4/17/2013	-
<input type="checkbox"/> Client: Client Name: Brandon Roger (1 record)			
Landscape ABC	10.00	4/8/2013	-
<input type="checkbox"/> Client: Client Name: Jane Brown (1 record)			
Hotel	8.50	1/1/2013	-
<input type="checkbox"/> Client: Client Name: Jane Taylor (1 record)			
Rite Aide	8.05	1/9/2013	-
<input type="checkbox"/> Client: Client Name: Mark Smith (4 records)			
UPMC	7.25	4/1/2013	4/20/2013
McDonalds	7.00	4/15/2013	4/22/2013
action	8.10	4/26/2013	-
-	-	4/26/2013	4/26/2013
Grand Totals (10 records)			

Race profile of clients:

Run Report ▾ Hide Details Customize Save Save As Delete Printable View Export Details				
Client: Client Name				
<input type="checkbox"/> Race: Hispanic (3 records)				
Jane Brown				
Brad Bradley				
Ada Smith				
<input type="checkbox"/> Race: White (2 records)				
Alicia Drew				
Mark Smith				
<input type="checkbox"/> Race: African-American (2 records)				
Brandon Roger				
Jane Taylor				
Grand Totals (7 records)				

Education records for client, one client has multiple records:

Run Report	Hide Details	Customize	Save	Save As	Delete	Printable View	Export Details
Education Type	Start Date	End Date					
<input type="checkbox"/> Client: Client Name: Ada Smith (1 record)							
Highschool	-	8/1/2012					
<input type="checkbox"/> Client: Client Name: Alicia Drew (1 record)							
GED	4/9/2013	-					
<input type="checkbox"/> Client: Client Name: Brad Bradley (1 record)							
GED	5/1/2013	-					
<input type="checkbox"/> Client: Client Name: Brandon Roger (1 record)							
Highschool	-	4/4/2012					
<input type="checkbox"/> Client: Client Name: Jane Brown (1 record)							
Other	8/31/2010	-					
<input type="checkbox"/> Client: Client Name: Jane Taylor (2 records)							
Highschool	-	5/31/2011					
Other	8/31/2011	-					
<input type="checkbox"/> Client: Client Name: Mark Smith (1 record)							
Other	4/7/2013	-					
Grand Totals (8 records)							

Visual dashboard:

