Technology Consulting in the Community

Spring 2014

Cong Wang
The Education Partnership

Final Consulting Report

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

Carnegie Mellon University

Executive Summary

Student Consultant, Jennifer Wang
Community Partner, Jorgan Strathman

I. About the Organization

The Education Partnership (TEP) is a nonprofit organization that aims to address education inequalities. The organization raises funds and school supply donations from the communities and redistributes them to schools in need of such supplies. The organization has a mission statement of:

> *We are dedicated to addressing educational inequities by providing and enabling access to the tools and resources necessary to support teachers and enhance a student's ability to learn and succeed.*

The Pittsburgh based organization serves a geographic area encompassing six counties – Allegheny, Armstrong, Beaver, Butler, Washington and Westmoreland. The organization currently serves 24 schools, approximately 7,500 students, and approximately 750 teachers in seven districts. The organization had a 20% growth this fiscal year. For the next fiscal year, the organization aims to double its growth, targeting to serve at least 15,000 students.[1]

II. Elimination of information duplication and divergence

One of the major inefficiencies concerning TEP is the information duplication due to the lack of integration between QuickBooks and Salesforce.com. Currently, the staff enters new Accounts & Contacts (Customers & Vendors), Opportunities (Donations), and Expenses (Bills) into Salesforce.com daily as well as updating and maintaining those records as necessary. TEP also maintains all financial information in QuickBooks. The records entered include Donations, Bills, Budgets, and Checks. Therefore, information is duplicated without systems integration.

In order to eliminate this inefficiency and take advantage of the full power of Salesforce.com, Salesforce.com must become the organization's primary port of data entry and this data must be able to travel where it is needed. It is unlikely financial information like donations will continue to be accurately entered into Salesforce.com without integration with QuickBooks. This will greatly disable TEP's ability to capture correct data and generate useful reports for analyzing its donation and expenses. Without useful analysis of donations and expenses, TEP are subject to risks of unsuccessfully collecting sufficient amount to serve the number of students they are aiming to serve.

III. Outcomes

The student consultant helped TEP to adapt a leaner operation by integrating the organization's Salesforce.com and QuickBooks. A bidirectional connection between Salesforce.com instance and QuickBooks server file will be available once the grant is received from the donor. Bills and expenses can be entered more accurately and promptly in one system (Salesforce.com) and transferred to another (QuickBooks). The new integration tool will reduce TEP's data entry overhead by more than 50%. Therefore, when TEP doubles the amount of students they are

[1]http://www.theeducationpartnership.org/about *Who we are*

serving, the doubled donations and expenses data record can now be handled within the saved overhead time. The integration ensured TEP to have the capacity to handle the anticipated vast increase in data entries in a timely and correctly manner. In addition, previously the client spent three weeks finding and correcting the current mismatch between the two systems. This will be eliminated in total after the implementation of the new tool. TEP is now capable of generating correct analytical report on its donations and expenses.

II. Recommendations

Vision

The future of the Education Partnership should be successfully providing and enabling access to the tools and resources necessary to support teachers and students at a targeted growth rate of 200% per year by continuously harnessing and enhancing the right technologies to complement its administration and effective communication with its members, community and the public at large. By utilizing information technology, TEP will have the ability to achieve a leaner operation — that is to significantly reduce their day-to-day operation overhead time. With a learner operation, TEP will have the capacity of sustaining its current and objective growth of serving more and more teachers with the right school supplies for their classrooms.

To fulfill this mission, the student consultant made two recommendations:

Goal 1: ***Implement appointment scheduling software for booking services for teachers***
The current overhead time associated with TEP's core service – school supplies distribution – is very high. The current effort to schedule a visiting time for teachers is done by phone and paper – a staff from TEP simply calls each individual teacher and records their available times. If each call to the teachers take 5 minutes, and TEP is currently serving 700 teachers, it will take the staff approximately 58.4 hours to complete the phone calls. Next year, the currently 60 hours will be doubled to 120 hours based on the targeted growth. This is a highly inefficient process and therefore the student consultant recommends TEP to install an online appointment scheduling software.

Goal 2: ***Create Data Storage Plan to manage existing future Salesforce.com data storage***
With the current non-profit version of Salesforce.com, TEP has 1 gigabyte of free storage. In a year's time, it has consumed 40% of the1G storage. Based on the goal of 200% annual growth, it is projected that TEP will use up this 1G free space in the next fiscal year. For additional data storage, Salesforce.com charges $1200 per year for an extra 1G. The student consultant thus recommends TEP to create a data storage plan. Specifically, the student consultant recommends TEP to firstly identify the core data that needs to be stored directly in Salesforce.com, and then store the remaining data in the server and record the unique server URL for each file in Salesforce.com.

Community Partner
Jorgan Strathman
jorgan@theeducationpartnership

The Education Partnership
281 Corliss St, Pittsburgh, PA 15220
http://www.theeducationpartnership.org/

About the Consultant
Jennifer Wang
congwang@andrew.cmu.edu

Jennifer is a student in Information Systems.
She will begin working as an analytics consultant for
Deloitte Consulting this summer.

Final Consulting Report

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Community Partner, Jorgan Strathman

I. About the Organization

The Education Partnership (TEP) is a nonprofit organization that aims to address education inequalities. The organization raises funds and school supply donations from the communities and redistributes them to schools in need of such supplies. The organization has a mission statement of [2]:

> *We are dedicated to addressing educational inequities by providing and enabling access to the tools and resources necessary to support teachers and enhance a student's ability to learn and succeed.*

The Pittsburgh based organization serves a geographic area encompassing six counties – Allegheny, Armstrong, Beaver, Butler, Washington and Westmoreland. The organization currently serves 24 schools, approximately 7,500 students, and approximately 750 teachers in seven districts. The organization is able to deliver a 3:1 return on every dollar given due largely to their ability to leverage expertise in the area of in-kind giving complemented by a dedication to minimizing administrative and operational expense. [3]

The organization had a 20% growth this fiscal year. For the next fiscal year, the organization aims to double its growth, targeting to serve at least 15,000 students. With the new goal, there is a need for leaner operation as well as larger donor support. In order to attain the desired level of supplies donations, the organization first need to double its size (a requirement set by their top donor). There are opportunities that the organization could leverage technologies to either cut expense from operation to purchase the desired supplies on their own or attract other major donors.

Facilities

Located at 281 Corliss Street, Pittsburgh PA, the organization has its resource center together with its home office. The resource center has two parts: a warehouse keeping inventory and a room for distribution. The organization organizes and categorizes product donations in the storehouse. During the distribution days, products will be displayed in the display room for teachers to pick up. The home office is connected to the warehouse and all the staff working in cells of the office. The resource center is currently undergoing a Phase II renovation. TEP has redesigned their space by switching the distribution area with the storehouse. In order to provide a better shopping experience for incoming teachers, new lightning and heat will be installed. A new café and information helpdesk will be made available in the distribution area.

Programs

[2]http://www.theeducationpartnership.org/about *Who we are*
[3]http://www.theeducationpartnership.org/about *History*

The core program of the Education Partnership is the School Supplies Program. It provides school and classroom supplies, at no cost, to eligible schools in the organization's six county service areas. Each year, schools are chosen through an application process. The criterion is that if 70% students in an applicant school are eligible for the National School Lunch Program, it is qualified for the School Supplies Program. For schools chosen by this program, their teachers can join the three distribution events held in the resource center and pick up school supplies such for their classes. This year, approximately 600 local teachers will visit TEP and each leave with around $400 worth of school and classroom supplies for their students and their classrooms. TEP uses 3C, a point of sale computer system, to check teachers in and out of the distribution. The data is then transferred to Salesforce.com, which is the organization's CRM system (SFDC). Inventory and teacher data are stored in SFDC.

Staff

There are ten employees currently working for the organization. The key staffs I will be working with are:

- Jorgan Strathman, Process Integration Manager
  Jorgan is responsible of overseeing the entire technology practice of the organization.
- Peggy Wolstoncroft, Office and Development Manager
  Peggy is responsible for overseeing the finance practice of the organization.

Currently the staffs are using computers on a daily basis. They do have access to relevant computer office applications. They are using Microsoft Office and SFDC on a regular basis. Both Jorgan and Peggy know what they need to make use of the technology available to them. Jorgan is responsible for training the entire staff regarding any computer usage. He is a certified SFDC administrator who trains the staff on a regular basis regarding SFDC.

Technology Infrastructure

The organization has approximately two dozens of computers. Around two third of those are desktops and the rest are laptops. All the computers have XP as their operating systems across the board. Because XP retires this spring, the organization needs to upgrade the computers' operating systems sometime in the current fiscal year or next. Printers, scanners and fax machines are available to communicate documents. A projector and screen is available for presentation and meeting purposes. The organization has a server and it is automatically backed up to its hard drive. The organization also adopts the highest level of residential class Internet. In addition, the organization is equipped with a POS system to keep track of transactions. The organization is expecting a new set of computers in by the end of April to replace the previous outdated computers.

Technology Management

The technology infrastructure is being managed solely by Jorgan Strathman, the process integration manager. Jorgan is responsible of overseeing the entire IT practice of the organization. His role includes reporting, fixing, and logging problems. Jorgan's main focus is in maintaining and supporting the organization's SFDC. There isn't an IT support team. The organization does escalate to external support. As of equipment maintenance, Dennis, a

qualified volunteer, is responsible for this role. Whenever anything breaks on the technology side, Dennis will come in and fix it. Besides leveraging Dennis's help, the organization joined the Regional Technology Collaborative, where different nonprofit organizations within Pittsburgh get together regularly and ask each other technical questions. Critical data is backed up on a regular basis. The server is automatically backed up to its 2 TB hard drive. Also SFDC is fully backed up once a week. Software and anti-virus programs are updated automatically.

Technology Planning

The Education Partnership has no previous technology planning. There is no technology planning committee. The previous technology management experience was on a ad-hoc basis. However, starting this fiscal year, because of the implementation of the SFDC, the organization is going to draft a technology plan, and Jorgan will be responsible it. Even though TEP had no previous technology plan, they did go through partial technology planning when they decided to adopt SFDC. Jorgan composed a RFP for inventory management system, a RFP for volunteer management system, and a RFP for CRM. Their first CRM was Sageact. However they did not have a good experience with it. Construction Junction approached the organization and suggested SFDC to them. Because SFDC is free and can do anything they desired, the organization decided to move to SFDC. Moving forward, the organization would like to incorporate all departments to SFDC.

Internal Communication

Information is shared internally through emails and SFDC Chatter, with emails as the primary tool. For external information sharing, emails and phones are primarily used. All staffs have Internet email accounts. The organization manages all its contact information in SFDC. This includes the email and web addresses of its donors, funders, and clients as well as other contact information. They communicate with their constituents through phone, email, meeting, and personalized letters. Because the organization only has 1 GB free space on SFDC, they need to be careful on how much data to put to SFDC. Extra space on SFDC can be purchased at 1200 dollars per GB per year. The organization is interested in investing in larger space in the future. A currently difficulty of communication involves around the lack of integration between QuickBooks and SFDC. Because these systems are managed separately and they do not talk to each other, bills and expenses have to be entered twice and separately. This process is costly and subject to mistakes.

Information Management

All of the organization's data is contained in the cloud based SFDC platform. The organization has an information system to manage its critical information needs. About 50% of the SFDC instance they use is out-of-the-box, non-profit management and the other half are customizations for their specific needs. One of the biggest shortcomings at the moment is a lack of documentation and centralized business process narratives. Because SFDC is new, they have prioritized developing solutions over explaining those solutions to others. This must be done soon in order to stabilize the new database and protect the organization from HR rollover.

Business Systems

The organization has managed their own books in house for over two years using QuickBooks and the guidance of a paid consultant who comes onsite twice a month. They haven't had any major problems as a result. Reports are accurate and adequate. However, their financial accounting is perhaps one of their biggest areas of redundancy right now, because bills and expenses are entered separately into both SFDC and QuickBooks without any type of integration.

II. Elimination of information duplication and divergence

One of the major inefficiencies concerning TEP is the information duplication due to the lack of integration between QuickBooks and Salesforce.com. Currently, the staff enters new Accounts & Contacts (Customers & Vendors), Opportunities (Donations), and Expenses (Bills) into Salesforce.com daily as well as updating and maintaining those records as necessary. TEP also maintains all financial information in QuickBooks, which has information dating back to the beginning of the organization in 2009. The records entered include Donations, Bills, Budgets, and Checks. Therefore, information is duplicated without the systems integration.

In order to more accurately and promptly enter bills and expenses, Salesforce.com gives TEP the access to record more information regarding an entry: the who, what, when and where. This has decreased the amount of time the finance team spends collecting that information. However, the information must all be copied from Salesforce.com to QuickBooks manually and this process is not only costly but also subject to mistakes. Compounding this dual system problem, when data are entered into QuickBooks they typically appear days or weeks after they appear in Salesforce.com, which makes all reporting between the two systems divergent. Sometimes, some bills and expenses are entered directly into QuickBooks and not into Salesforce.com.

In order to eliminate this inefficiency and take advantage of the full power of Salesforce.com, Salesforce.com must become the organization's primary port of data entry and this data must be able to travel where it is needed. It is unlikely financial information like donations will continue to be accurately entered into Salesforce.com without an integration with QuickBooks. This will greatly disable TEP's ability to capture correct data and generate useful reports for analyzing its donation and expenses. Without useful analysis of donations and expenses, TEP are subject to risks of unsuccessfully collecting sufficient amount to serve the number of students they are aiming to serve.

III. Outcomes

In order for TEP to have the capacity to meet the goal of doubling the amount of students they are currently serving by the end of next fiscal year, a leaner operation is needed. The student consultant helped TEP to adapt a leaner operation by integrating the organization's Salesforce.com and QuickBooks. A bidirectional connection between Salesforce.com instance and QuickBooks server file will be available once the grant is received from the donor. Bills and

expenses can be entered more accurately and promptly in one system (Salesforce.com) and transferred to another (QuickBooks). The project is divided into four phases: preparation, evaluation and vendor selection, installation, and training. The outcomes of each of the phases are described as follows.

Outcomes from phase 1

In the preparation phase, there were two major achievements. The first one was that a system comparison chart was created to analyze the functionality of the two systems. The first step of the project was to understand how the two systems are currently been used and identify all the duplicated functionalities. The student consultant consulted with Peggy, who is the sole user of QuickBooks, of how she is currently using the system. Specifically, the student consultant asked for the types of information stored in QB and the steps of how the information is recorded into the system. She then asked the same questions regarding to Salesforce.com. The student consultant then listed the functionality of the two systems and highlighted all the duplicated functions. The functionality analysis chart will ensure TEP to successfully capture all the duplicated processes that needs to be addressed in the integration project. (Appendix A)

The second achievement was that an information flow diagram was created to determine the direction of information flow (SF to QB or QB to SF). Upon analyzing the functionalities identified in the previous step, the student consultant then created an information flow diagram that showed the relationship between external and internal information flows between TEP. The diagram showed that most information branch out form Salesforce.com. As a result, the student consultant helped TEP to identify that Salesforce.com should be used for the primary port of data entry.

	Salesforce.com	QuickBooks
Before	• **New Expenses (Bills)** • **New Opportunities (Donations)** • New Accounts & Contacts (Customers & Vendors) • Updating and maintaining above records as necessary	• **New Expenses (Bills)** • **New Opportunities (Donations)** • Check Writing • Budgeting • Reconciling
After	• New Accounts & Contacts (Customers & Vendors) • New Opportunities (Donations) • New Expenses (Bills)	• Check Writing • Budgeting • Reconciling

Outcomes from phase 2

In this installation phase, there were two solid outcomes from the cooperation between the student consultant and the community partner. Multiple software packages were evaluated and a vendor comparison chart was created to aid in choosing the best software.

After the determination of Salesforce.com as the primary port of data entry, the student consultant researched all satisfying software in the industry and created a vendor comparison chart. The first step to the comparison chart is determining the sets of requirements that needed to be considered in the selection process. The included requirements are: the volume of information, the roles and numbers of administrators / users, core functions required for the software, desired time to implement the new software, and the budget for the new software. The student consultant then worked with the community partner to identify the most important requirement. Based on our requirement list, we narrowed down to three vendors whom we decided to approach further with. We reached out to all three of them through emails and conference calls. (Appendix B)

The second outcome was the determination of a customized integration tool. After communicating with the vendors, we decided to try a trial version of one of the product. After installing it on our Saleforce.com sandbox, we soon realized that the product is not suitable for TEP. A whole expense field was missing and that information is crucial in the information flow. We then consulted with other vendors and found that the expense field is not offered in the standard package but can be created. It was determined at this phase that TEP needs a customized integration tool.

The third outcome was the creation of QuickBooks and Salesforce.com Field Mappings. Specifically, in the chart, we mapped out Salesforce.com (SFDC) object, SFDC Object Record Type Name, SFDC Object Record Type Label, SFDC Field Name with Quickbooks (QB) Field Name and QB Process. We then labeled all the required field/functions that need to be customized in red. For example, the vendor will know that we need a customized trigger on “posted” in SFDC’s “stage” field. After the map was created, we presented it to the three vendors and they then came back with complete offer packages including the approach to building the tool, the cost, the services included in the package, as well as the expected installation time. (Appendix C)

The final outcome in this phase was that we chose Interweave to be installed based on their on their low cost and high expertise.

Outcome from phase 3

There were two outcomes in this step. The first was a grant proposal was submitted to gather the required fund to purchase Interweave’s customized product. The second was that data records were cleaned and linked in the two systems to allow for a successful integration. In order to link the two systems, the student consultant first printed out all the past transactions in QB and matched them up in salesforce.com by value and corrected the dates (since most of them were recorded on different dates) and recorded the unique salesforce.com number. This number is then inputted into QB. The student consultant ensured that once the software is ready

to be tested, it could be installed directly to Salesforce.com without any error due to information mismatch.

An additional outcome in this phase was that during the data cleaning and matching process, TEP's SFDC and QB accounts are now mostly balanced. Before the process, there were $12,000 differences. Now, the student consultant was able to narrow this number down to within $30.

Outcome from phase 4 [next step]

Because the grant has not yet received, this phase is yet to be completed. However, within the package that Interweave offered, training services are offered at a low rate. This rate is included in the grant proposal and TEP is aiming to purchase the training services Interweave offers.

Outcomes Summary

The new integration tool will reduce TEP's data entry overhead by more than 50%. Therefore, when TEP doubles the amount of students they are serving, the doubled donations and expenses data record can now be handled within the saved overhead time. The integration ensured TEP to have the capacity to handle the anticipated vast increase in data entries in a timely and correctly manner. In addition, previously the client spent three weeks to find and modify the current mismatch between the two systems. This will be eliminated in total after the implementation of the new tool. TEP is now capable of generating correct analytical report on its donations and expenses.

The outcome of the project is sustainable as full documentation was created to capture all aspects of the project. TEP can also use the documentation as a guide for any future technological orientated projects.

II. Recommendations

Vision

The future of the Education Partnership should be successfully providing and enabling access to the tools and resources necessary to support teachers and students at a targeted growth rate of 200% per year by continuously harnessing and enhancing the right technologies to complement its administration and effective communication with its members, community and the public at large. The vision of the recommendation is to provide TEP a set of tools by using which they can improve their existing processes and make use of information systems in expanding and optimizing operations. By utilizing information technology, TEP will have the ability to achieve a leaner operation — that is to significantly reduce their day-to-day operation overhead time. With a learner operation, TEP will have the capacity of sustaining its current and

objective growth of serving more and more teachers with the right school supplies for their classrooms.

Goals

To consider TEPs future growth and expansion, they could take the following two steps to sustain their growth:

Goal 1: Implement appointment scheduling software for booking services for teachers

Goal 2: Create Data Storage Plan to manage existing and future Salesforce data storage

Strategies

Goal 1: *Implement appointment scheduling software for booking services for teachers*

Background

The core service that TEP provides to its community is to provide school and classroom supplies at no charge to support teachers and enhance a student's ability to learn and succeed. Teacher who have applied and been selected into the School and Classroom Supplies Initiative are scheduled to come shop at TEP three times a year. They occur in August, January and April. Because of the limited storage capacity, only a predetermined number of teachers are able to come in on a single day. The current effort to schedule a visiting time for teachers is done by phone and paper – a staff from TEP simply calls each individual teacher and records their available times. She then combines all the information she collected and creates a schedule that meets all of the requirements. In some cases teachers make an adjustments to their current schedules. As a result, a new calendar will be made based on the changes.

Justification

The current overhead time associated with TEP's core service – school supplies distribution – is very high. If each call to the teachers take 5 minutes, and TEP is currently serving 700 teachers, it will take the staff 5 * 700 = 3500 minutes, that is approximately 58.4 hours to complete the phone calls. It will take another 3 hours create a schedule based on the available times and TEP's shopping area capacity. Thus, the current schedule time takes about more than 60 hours. Next year, TEP is projected to double its growth rate by serving doubling number of teachers. Thus, the currently 60 hours will be doubled to 120 hours based on the growth. This is a highly inefficient process and an online appointment scheduling software is urgently needed.

Because the next distribution of supplies will happen in a month time, this gives very limited time to develop and implement a long-term plan. A short-term strategy is recommended under the current situation.

Short-term Strategies

The short-term strategy is to implement a ready-to-use online appointment scheduling software. The degree of customization here is limited due to the time constraint. The software may not meet all of TEP's requirements but will be able to significantly reduce TEP's scheduling

overhead time for its upcoming school supplies distribution. The selection should follow the below process:

(1) System Analysis:

A system analysis should be done to understand the current IT capacity for the new software. Specifically, because TEP is using SFDC, software that has the ability to integrate to SFDC or run on SFDC platform is ideal.

(2) Requirement Analysis

Requirements of the software should be gathered at this phase. The requirements can be considered from the following perspective:

- The volume of information
- The roles and numbers of administrators / users
- Core functions required for the software
- Desired time to implement the new software
- The budget for the new software

Because of the current situation, the "desired time to implement the new software" perspective should weigh more than other perspective.

(2) Software Selection

Select the appropriate software based on the requirement. A full software comparison chart is created and included in the Appendix. The student consultant has conducted an initial screening and selected five software that, in her opinion, are most suitable for the organization. The two that are top on the list are SUMo and Booking Social Lite. SUMo stands out for its outstanding features while Booking Social Lite stands out with its price. A brief description of these software are included below:

A. Sumo – Sumo combines scheduling, automation, CRM, social, and mobile all together. It is compatible with Salesforce.com. One of the most important advantages Sumo has over other software is that it can be extended into a self-service website. Therefore when teachers log into their portal on TEP's website, they can be directed to this self-scheduling page and book an appointment themselves. It also has these cool features of sending automated reminders with email, text, and automated voice reminders. The downside of Sumo is its high expense. It charges $49/month.

B. Booking Social Lite – This is a free cloud based appointment booking solution. It is also compatible with SFDC. Because there is no fee associated with this software, the functions it provides are much more limited. The complete list of features is included in the Appendix.

(4) Implementation in test environment and Test

After the selection of software, the software (a trial version) actually gets implemented in test system environment (i.e. SFDC sandbox). On the environment, the project team tests whether the new software can meet the requirements.

(5) Transition

After testing the new software, the new software launches in live environment.

Expected outcomes
By implementing the new online appointment scheduling software, teachers can now book an appointment time themselves. This will save TEP of approximately 120 hours of overhead time.

Resources
Besides the five software that are included in the comparison chart, here are other related. Some of them are compatiable with Salesforce.com and some are not.

http://freelancefolder.com/12-free-appointment-scheduling-software-packages-for-freelancers/

https://appexchange.salesforce.com/listingDetail?listingId=a0N30000009vvy4EAA

https://appexchange.salesforce.com/results?keywords=appointment

Goal 2: *Create Data Storage Plan to manage existing future Salesforce data storage*

Background
With the current non-profit version of SFDC, TEP has 1 gigabyte of free storage. In a year's time, it has consumed 40% of the1G storage. The top consumption categories are data in inventory systems, CRM, Mailchimp, Timba Surveys, and Volunteers for Salesforce.com, based on the consumption report generated in SFDC. All of the data are internal SFDC data.

Justification
Based on the goal of 200% annual growth, it is projected that TEP will use up this 1G free space in the next fiscal year. For additional data storage, SFDC charges $1200 per year for an extra 1G. TEP is currently short on IT budget. Its SFDC and QuickBooks integration project is its top priority that will consume most of their IT budget. Therefore, a data storage plan should be created in order to better manage the data stored on SFDC and postpone the additional storage purchase as later as possible.

Strategies
There will be two different sets of strategies. The first set of strategy is tailored toward SFDC internal data while the other set of strategy is tailored toward data that can be or already stored externally on the server.

1) Salesforce.com Internal Data Management

SFDC esforce.com internal data accounts to the data records that are entered manually into SFDC. The key to this strategy is to identify the groups of data that need to be kept within Salesforce.com. As mentioned above, currently the top consuming objects are inventory systems, CRM, and Mailchimp. Therefore, the first step to this plan is to go through each record type within these categories and fill out the SFDC Internal Data Analysis chart below. The chart helps TEP to evaluate the importance of each record type and understand how it is currently utilized in Salesforce.com. This will help TEP to eliminate peripheral data records storage in Salesforce.com move the peripheral data to external storage.

SFDC Internal Data Analysis					
Field Name	**Record Type**	**Duplication**	**Value**	**Analysis**	**Cost of removal if stored externally**
	SFDC Object Record Type Name	Y/N. If Y, can this version be deleted?	What is the value of keeping this data? How useful and important is it?	Is there analysis ran on this data? What are they? How important are they?	If the data is stored externally what harm will this cost?
A					
B					

After the chart is completed, the next step is to assign a weight to each criterion. It is up to TEP to decide how important each criterion is to its current business situation. After each record type is scored based on the weighting system, TEP will then have to decide on a cutoff point. It is recommended that they start with a low cutoff point in the beginning and move higher as they become more familiar with the selection strategy. The record types that scored lower than the cutoff point should follow the external data management strategy.

2) External Data Management

This section refers to any data that does not have to be directly stored in Salesforce.com. Instead, they can be accessed through an external link. Because of the storage limitations, a lot of the documents could not be uploaded and accessed to the SFDC. The server currently stores 4 terabytes of data and a lot of them are useful but cannot be accessed directly from salesforce.com. In order to solve this problem, TEP can generate a document-specific- URL and store the URL in the needed places. To achieve that, TEP can take the following steps:

Step1	Connect a computer to the server (all of the computers in TEP are connected to the server, so just choose any one to start)
Step2	Click on the file in server that the staff hope to put in Salesforce.com
Step3	Store the unique path/connection information

Step4	Copy this information into Salesforce.com
Step5	Update the IP address of the computer to the server to security purposes
Step6	Update all the IP address of the computers that are granted the access of the server to the server. In this way, information will not be leaked to external users.

Expected outcomes

By implementing the data storage plan, TEP will have the ability to understand its data and implement different strategies for separate types of data. It will redefine its core data and store the peripheral data elsewhere. This will free up some of the storage rooms in SFDC and also postpone future storage purchases.

Resources

Staff: This project could be managed primarily by IT staff. However, for a holistic data view, all of the staffs' efforts are required.

IT Consultants: IT consultant will be useful in finding and incorporate the path/URL to the server as well as embedding security settings in the URL.

IV. About the Consultant

Jennifer Wang is a master student majoring Management Information System in Heinz College, Carnegie Mellon. She will work as a analytics consultant intern for Deloitte Consulting in San Jose this summer. Her field of interests includes data mining, business intelligence and information technology consulting.

Appendix A

Salesforce.com	**QuickBooks**
Track donations, record by category	Track invoices & deposits Tract lost/profit Track how much paid to vendors
Staff record expenses	Track expenses Payable vendors
Generate reports based on category	Generate budget vs. actual report
	Pay the bills Bank reconciliation Payroll Write checks Reconcile with balance sheet Chart of account Balance Sheet
Record contact information	

Appendix B

Integration Solution	QB Requirements	Fee structure	Synchronization	Integration Approach	Setup	SFDC Objects	Website	AppExchange Listing
Dell Boomi AtomSphere for Integration	QB Desktop US 2007 or higher	no implementation fee;monthly fee starting at $65	bidirectional	widget runs in the background and periodically checks for changes	web-based wizard; 15 minute configuration	Accounts, Contacts, Opportunities, Products and Invoices (Custom Object)	http://www.boomi.com/solutions/salesforce#tab3	https://appexchange.salesforce.com/listingDetail?listingId=a0N300000016ZbtEAE
DBsync	Windows, QB Installed	Enterprise -$1345.5	Only DBsync version EE is bidirectional			Accounts, Contacts, Products and Opportunities	http://www.avankia.com/template.jsp?section=dbsyncqb	http://sites.force.com/appexchange/listingDetail?listingId=a0N300000016bTHEAY
Intuit Quickbook Sync	QB US 2007 (2006?) and later; does NOT support Vista Home; Quicken Online	$25/month	user can configure as uni or bidirectional	Scheduled or On Demand	20 minute	Customer (Account/Contact?), Products and Opportunities	atasolutions.com/home/Products/datasynch-onpremise-	http://sites.force.com/appexchange/listingDetail?listingId=a0330000003elxmAAE
Autofy	Works with QuickBooks Online or QuickBooks Desktop Pro, Premier, or Enterprise 2009 or newer, U.S. and Canadian Editions	Non-profits: $495/year	see figure 1.1			Accounts, Products, Opportunities	http://www.propelware.com/autofy-for-salesforce	https://appexchange.salesforce.com/listingDetail?listingId=a0N30000003JAGSEA4
InterWeave	Static IP for QB company file	Professional: starts at $1,400; Premier: starts at $2,315; Small Business: starts at $3,100; Enterprise: starts at $5670	Uni or bidirectional at object level	Hosted solution. First 3 model are button activated (OnDemand) - at home page and object level. Enterprise - Scheduled at object level. The InterWeave difference is the Solution is already written in configurable form (over 135 configuration selections if you choose all object options). Workflow and business rules are configurable. With InterWeave Smart Solutions, you can purchase, configure and run a customized integration process for these applications that integrate all standard Salesforce objects: • SF Account/Contact to QB Customer/Job • SF Person Account to QB Customer/Job • SF Account/Contact to QB Vendor • SF Opportunity to QB Job • SF Opportunity to QB Sales Order • SF Opportunity to QB Purchase Order • SF Opportunity to QB Invoice • SF Opportunity to QB Sales Receipt • SF Opportunity to QB Estimate • SF Opportunity to QB Bill • SF Opportunity to QB Check • SF Product to QB Item • and much more (custom objects, Credit Card Payment Gateways, eCommerce Gateways, etc.)	Web based UI - configuration typically 30 minutes	Accounts, Contacts, Quotes, Opportunities, Products and Custom Objects	http://www.interweave.biz/	http://sites.force.com/appexchange/listingDetail?listingId=a0N300000016bNkEAI

Figure 1.1

Salesforce	Data Direction	QuickBooks
Opportunities marked as "Closed/Won"	→	Sales transaction • User can create estimate, sales order, invoice, or sales receipt
• Can also send SFDC quotes to QuickBooks • As updates happen in Salesforce or QuickBooks, we can track changes and make required modifications • Use of price books in SFDC works perfectly in Autofy. We'll find the correct product and use it as part of the transaction		
Accounts	←	Customers • Customers created or edited in QuickBooks are automatically synchronized to Salesforce as an account
• Accounts are automatically transferred to QuickBooks when they are associated with a sales transaction		
Products	←	Items • Items created or maintained in QuickBooks are automatically sent to Salesforce
• Products can be created in a specific price book		

Appendix C (credit to Jorgan)

Salesforce.com Object	SFDC Object Record Type Name	SFDC Object Record Type Label	SFDC Field Name	Quickbooks Field Name	Quickbooks Process
Opportunity	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Amount**	Amount	**Deposit**
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Budget Line Item**	From Account	
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Campaign Name**	Class	
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Check Number**	Chk. No.	
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**ON TRIGGER: <Today's Date>**	Date	
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Name**	NEW FIELD NEEDED "Salesforce Name"	
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Organization Name**	Received From	
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Stage**	TRIGGER ON "Posted"	
	Donation Grants Sponsorship	Cash Donation Grants Sponsorship	**Type**	Pmt. Method	
	Donation	Cash Donation	**Quickbooks Bypass**	RULE	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Amount** **Total Purchase Cost**	Amount	**Bill**
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Budget Line Item**	From Account	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Campaign Name**	Class	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Date of Expense** **TRIGGER ON: <Today's Date>**	Date	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Expense Name**	NEW FIELD NEEDED "Salesforce Name"	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Invoice Number**	Ref. No.	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Stage**	TRIGGER ON "Approved for Quickbooks" TRIGGER ON "Ordered"	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Terms of Payment**	Terms	
Expenses__c Opportunity	Master Inventory_Purchase	Master Inventory Purchase	**Vendor Organization Organization Name**	Vendor	

Appendix D

Software Solution	Features	Fee structure	Supported Platforms	Intended Users	Supported Devices	Website
SUMo	• Let candidates, customers, volunteers, and constituents book appointments via your web site, email signature, and more. • Reduce no-shows by sending text message, email, and automated phone reminders. • Manage unlimited staff and work shifts, across multiple locations. • Maintain a database of members, including profiles, contact details, insurance information, history, and more. • Mass email the members newsletters, announcements, and more. • Content library to store and share digital content. • Conduct assessments and forms. • Automate document generation. • Multi-location reporting & metrics. • Task management.	$22 per user / per month for Single location; $34 per user / per month for unlimited locations. *Minimum of 5 user licenses required	**Salesforce**	Large Enterprises, Mid Size Business, **Non Profits**, Public Administrations, Small Business	Web-based	http://www.sumoscheduler.com/
Booking Social Lite	• Online Appointment Booking • Manage multiple business units • Automated appointment reminders sent to clients to prevent tardiness and no-shows •Clients can find and book with the organization from Google and Yahoo	Free for small users with less than 50 appointments per month. Upgrade package $49/month	**Salesforce**	Small Business, **Non Profits**	support all smart devices	http://bookingsocial.com/
Setster	• Multiple Service Provider Appointment Management • 24/7 Online Appointment Scheduling • Two-Way Calendar Syncing • Email Verifications and Confirmations • SMS Notifications on Booked Appointments • Automatically or Manually Confirm Appointments • Billing and Invoicing for Scheduled Appointments • Group Sessions for Classes and Tours • **Easy Integration Onto Website or Blog**	**Business:** 5 Service Providers, 5 Locations $32/mo billed annually; $40/mo billed monthly **Corporate:** 20 Service Providers, 20 Locations $80/mo billed annually; $100/mo billed monthly	Open API, Quickbooks Intuit, **Salesforce**	Freelancers, Large Enterprises, Mid Size Business, **Non Profits**, Public Administrations, Small Business	Android, iPhone-iPad, Linux, Mac, Mobile Web App, Open-source, RIM-BlackBerry, Web-based, Windows, Windows Phone	www.setster.com/
Agendize Online Scheduling	• **Accept appointments from your website and Facebook page** • Integrates with Google Calendar, Outlook and more • Email and SMS reminders for customers and staff • Flexible booking options for any type of business • Detailed client activity information at your fingertips • Send email promotions to some or all customers • Easy for customers and staff alike to cancel and reschedule • No Show tracking to keep tabs on customers who don't show up • Sync client data with CRMs like Salesforce, Zoho and more • Integrated with MailChimp, Constant Contact and more • **Flexible APIs allow further customization**	$20.00/month	Google Apps, **Salesforce**	Freelancers, Large Enterprises, Mid Size Business, **Non Profits**, Small Business	Web-based	http://www.agendize.com/features/appointment-scheduling-software
Open Cal	• Receive Online Appointments • Manage Schedule • Keep Track of Clients • Control Staff & Services • Create Business Reports • Promote Your Business	Free, $19, $39, and $59 monthly plans. All paid plans include a 30 day free trial.	Google Apps, **Salesforce**	Freelancers, Large Enterprises, Mid Size Business, **Non Profits**, Public Administrations, Small Business	Android, iPhone-iPad, Linux, Mac, RIM-BlackBerry, Web-based, Windows, Windows Phone	http://opencal.com/