January 14, 2014

**From**: Sam Walton

**To**: David

**Re**: Proposal for Application to streamline, aggregate Goodwill site inspections.

**Executive Summary**

In order to make it easier to capture inspection data at Goodwill sites, I propose we transition from single MS Excel spreadsheets and build a web application that solve the problems inherent with emailing Excel into QuickOffice but still available to our team using their tablets. This will be a platform that can be built and maintained by us and extended in ways that the spreadsheets are not able to perform because they are not mobile friendly. A web application can be built as a platform for other initiatives that can use this central repository in the future.

Thanks again for this opportunity to learn of our team’s needs and how I may help us find a way to lower the costs of work and ultimately help the team keep better track of how our assets are reducing waste and costs to our bottom line.

Our team is tasked with inspecting internal assets and does so by performing audits and inspections of its sites, including Stores and stand-alone Donation Express Centers looking for safety threats and mishandling of liquid assets. The team uses Microsoft Excel spreadsheets to run its reports and stores them separately for each inspection. These are referred to for future inspections as each new inspection requires its own report. And a store can have up to two reports: Loss prevention and Safety which are related in that results from one can be included in the other. These spreadsheets can be emailed to the company’s tablets which are used in the inspection visit.

The **advantages** are that data is entered once into the final document, using email before going out to the site to complete the inspection. This is a low-cost way to prevent duplication and using the Android wifi tablets the spreadsheets can be done on site. Excel is comfortable to use and these spreadsheets are very powerful, using formulas and interactive features to make them really useful to review.

The **disadvantages** are that they are single spreadsheets. There is no way to review any other spreadsheets than the ones emailed to the tablet beforehand. A single spreadsheet can only be aware of another spreadsheet’s data if some programming were built into each and they must both be available to each other in reliable locations as opposed to a thumb drive attached to a tablet. And the best solution on the tablets is to use Google’s QuickOffice suite. This remarkable program allows the tablet user to enter in data in as little as three steps for each item. But a limitation of QuickOffice is that while it is a large subset of Excel it doesn’t use all of the interactivity built into the spreadsheets, but to its credit it does retain the formulas.

**I propose building a web application** that can be the **central repository** of all the inspections of the sites that gets around the problem of ensuring the right spreadsheet gets to the right tablet and will have access to previous inspections as well as other data deemed important to the mission of Loss Prevention. The initial goal would be to present the information requested in the three spreadsheets that can be captured in the database for each site. We can set up views that would mimic the interactivity of the existing spreadsheets and improve them. The goal would be that entering data into a field would take two steps instead of three currently. Having that information means that not only previous inspection data can be viewed for that site, but other sites being available as well. Instead of managing many disparate spreadsheets, views can be made to use the data captured for other reports and other ways to input the data. In the future, store managers can look up their reports and respond. As this data becomes more connected, other data, perhaps from audits, can be captured and incorporated into reports.

The **disadvantages** would be that the wifi android tablets are not set up for data other than wifi which most of the sites do not have. That means that a separate cost of acquiring data modems and minimal data plans have to be factored in. Another disadvantage is that we’ll be developing a web application and having to maintain it ourselves. There will be a nominal cost of hosting as the application gets bigger, but it will be minimal because this is only an internal application.

The disadvantages can be **mitigated** by having me develop the application. I would use Ruby on Rails which is a framework that is used by many, if not most, of the bootstrap startups around the world because it has much of the database architecture already pre-written and hundreds, if not thousands, of developers contribute to it that we can roll in for free.

The other beauty of Rails is that because each part of it will be tested according to the agreed-upon specs (see below) and because these tests are written that way, other programmers will be able to read these tests and find that they document what it does, how it does it and the results which make it easier for me, or another programmer, to pick up and add features to it. Goodwill has at least one Rails application in use here so it’s not foreign to the organization. One of the benefits of using this framework is that because it has a lot of businesses depending on it that it is built with security in mind and will have top-notch updates and best practices built in, minimizing the risk to security. Another benefit because this is a rapid process I can show you progress to get approval as I go.

Initially, I would host it externally because this project would be outside of the scope of IT. The primary motivator to do so is to strip away constraints for rapid development. Once it’s matured and working as we expect then we can explore IT maintaining it. Hosting externally allows our team to access it inside and outside the firewall without special software. And we can host it for **free** on a top-tier host until our database gets to 10,000 records.

In the future, we can add more features to it, such as the ability for stores to respond to their reports, build in authentication with the Goodwill Active Directory system so that we can use our internal logins instead of maintaining user lists.

**Attached is a first draft of a specs** document for the main LP Store form. It’s from the view of Ryan in the role of inspector using this part of the application. There is more to write but the purpose of this initial document is to have in writing what my understanding of this part of the app is and to start a discussion about what should and should not be in it. There are two purposes for doing this work up front: **1)** is that what we agree on will be in the tests that the application must pass so that I’m building what we expect and not go off into a tangent and waste resources on something that may have little gain at this point. **2)** From this, we can determine the timetable for each feature and what needs to be done first and subsequent milestones.