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Techniques in Mass Appraisals

Ran Greenberg, ASA
Greenberg Machine Tools Ltd.
MTS Committee Membe

Ran Greenberg

Abstract: *This article discusses the challenge of an enormous mass appraisal project: inventorying and valuing all government assets for insurance purposes. Discussion focuses on developing a customized Excel system, choosing supporting software and hardware, and organizing inventory and data collection through an appraisal team. Photographs in this article are representative of the assets inventoried and appraised using this system.*

The Need for a Custom Technique

This project–valuating all the Israeli government assets for insurance purpose during the next few years—is not like the projects I have done in the past. This was my first project with millions of items. I needed a system to manage it.

First, I checked what systems existed in the market and had exploratory meetings with a few companies. I found good solutions where the data collected goes to the company's cloud with their app and then through analyzing tools to our office. However, these systems had problems for my project. The first problem was that the data for this confidential assignment would be stored in their server, which I felt was not appropriate. Second, the data collection process only worked online. Because some of the locations would have no cellular/Wi-Fi connection, this approach was not adequate.

I decided that the best solution was to build a customized system.

Developing the Customized Program

The first dilemma was choosing between Microsoft Excel spreadsheet software or Microsoft Access database software. I choose Excel as it is more familiar to our team personnel and would thus be easier to use.

A programmer friend explained that to create the program I needed, a programmer would need to understand what reports or information I wanted the program to produce. I took a blank sheet of paper and wrote my needs out in simple words: I needed a solution that would work to coordinate the efforts of two different teams. The inventory team would physically scan the items to create an inventory for the valuation. The office team would

analyze the data to determine values. The language between the two teams had to be consistent.

I hired a high-level Excel programmer to build these working tools. We had to update the program a few times during the first working months, but it was producing the results I had hoped for without the need for a nonconfidential cloud storage solution or online scanning. The tool was working fine.

Barcoding Items for Inventory Analysis

The inventory team worked with tablets or thin laptops, according to their preference. The tablets were Microsoft Surface Pro and Samsung. I found no difference in working with Excel in Windows or Android OS environments.

The scanning team used barcode readers to collect the client's existing internal inventory tracking barcodes. In addition to scanning barcodes, this team collected information for each item: producer name, model, place it was found (facility, building, floor, room name/number), number of items, and local agent contact details, when available from stickers attached to the item.

We also found it helpful to sort items into categories and subcategories such as the following:

- Furniture: Table, Chair, Lounge chair, Couch
- Computers: Desktop, Laptop, Tablet
- Power: Generator, Transformer, UPS; Voltage (sorted high to low within subcategory)

In early stages of a project the sort helped with filtering, and in later stages with summarizing.

At the end of each scanning day, the scanning team uploaded files to a specified library ("Files before analyze") in the company cloud, which the office team would work on the next day.

This data is compared to the data we collected from the client: the complete inventory and purchasing-list items from the last few years with their internal barcode. We organized this information in an Excel file, using a format that worked smoothly with the customized office team tool we'd developed.

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Our office team tool began by looking for barcode numbers that existed in the scanning team files and the client Excel files. The office team tool automatically imported each match from the client file, including purchase price and purchase date. This simple computer operation saved the office team a great amount of time.

Compiling Analysis on the Cloud

Because members of the office team work in different sites, we put the working Excel file in our company's Office 365 cloud to make it easy for the office team to work simultaneously on the office main Excel file.

A big advantage to the cloud solution is that each user could see online what changes were made. It worked well for the first part of the project, when the scanning was in process and new scanning items were added each day – but then a big, unexpected problem arose. As part of the barcode matching process, we had linked our office tool to the external purchasing files of the client. Each time one of the office team sorted our working Excel main file, all the connections with the linked files were rechecked, a process that took longer and longer as more data was added, making it impossible to work efficiently.

At this point, we experimented with working on our physical company server. Office team members worked with remote desktops when they were not in the office. This eliminated the slowdown of link checking but changes users made were not available online to other users. It was a temporary and not completely satisfactory solution. When the scanning was finished and all data imported, we copied all the data from the main Excel working file to a new, simple file with no links to other files. With only a simple Excel file to process, the computer was able to work in a fluent way. Office team members were again able to work remotely, simultaneously, and aware in real time of all changes made.

IT Considerations

I found that the hardware for the working station in the office must be minimum i5 and 8 GB RAM, preferred i7 and 16 GB RAM. A stable fiber internet connection, if available, is also recommended. Before this project, we again consulted with our IT manager on how to protect our server from cyberattacks as much as possible. We backed up our working file two times a day and at the end of each day our complete files automatically back up to an external hard drive. We exchange this external backup drive every few days and store it off-site in a small safe.

Ongoing Use

We continue to use this same system in other projects, some of which came with purchasing lists of more than one million line items. The barcode-matching operation was the same: 1–2 minutes and all was analyzed.

Internal Database Reference

At the end of a project, we add all the collected data to one simple Excel file, which we continue to use as a price reference for the next projects. In the database we have all the items listed with name, supplier, model, purchasing price, purchasing year, and name of project. It is very interesting to compare the same item's price between clients and see changes in prices during time, especially now in a high-inflation period.

Efficient Organization

The name of the game for completing mass appraisals is, in one word: Efficiency. I've discovered that efficiency and internal processes are what determines if you lose or earn in each project, especially with huge projects that come one after the other. You must think all the time how to be more efficient in this and the next project. Try to understand where the bottlenecks are, what prevents the scanning of more items per day, what analytical or data entering processes could be automated, and how and where to find prices for all the items.

Help Your Clients Help You

It's important to be organized and efficient in communications with clients.

Before starting a project, send your client an organized and clear list of what you need from him to start the project. My standard list includes approximately 18 items, including these:

- Purchasing lists from previous years
- Inventory lists with costs from all the storages
- Listing of all IT equipment
- Listing of all leased items

- List of all relevant persons for the project with their contact information
- Map of facilities with the asset locations marked

Set a meeting at the start of the project and ask your client to bring all the people who will be involved from their side in the project according to the list of items you sent. In the meeting go over each line and explain why you need the information, what format of file you need to receive from them (Excel, in my case), and explain how the work will be done by your people. Be patient and answer all their questions. This meeting is very important: these managers will be your ambassadors to their people in the next months when your team will be visiting their facility.

Data Sources

Ask your clients for their contact people in their supplier's company. Cultivate these contacts and your other contacts who can provide pricing data. When possible, I like to meet individually for a short coffee and take an interest in his job and personal life. In every case when someone has been a valuable resource, send a thank you card. Help these contacts be glad to hear from you when you call again next month for more help.

Emails and Calendar

Not all clients, if any, will send you all the information you asked for in organized fashion. I make a new email mailbox for each project, with sub-boxes such as IT, Engineering, Storage, Finance, Purchasing, and so on.

Each mail I send and each reply received are put in the appropriate box. Organizing emails like this makes it easier to quickly see what was asked and what reply, if any, was received. Periodically review these emails and make small reminders to yourself in your calendar to follow up on information you are missing from your client. In huge projects it takes time to gather all the data you've asked.

I suggest that you always cc an additional contact person on each mail request you send the client. It sometimes makes a difference: if you get an email with somebody else cc'd, it can push you a bit more to answer it.

When contacting equipment suppliers for asking prices, use the equipment name and model as the email subject. When you get the reply, you will more quickly understand what this answer is about.

Finishing Up

Finally–make a nice final report for your client. Put a big color picture of the facility on the first page; arrange your report so it is easy to understand; add simple tables to organize the data and present the final numbers in a bigger font; include comments and your recommendations in the summary.

Give yourself half a day off after you send the final report to your client. Clear your mind and start the next project the next morning. Good luck!

About the Author

Ran Greenberg manages his family's company, Greenberg Machines Tools Ltd. (GMT), headquartered in Tel Aviv, Israel. In 2015, Ran established an appraisal department within GMT to provide valuation of industrial equipment. Ran is a mechanical engineer with a master's degree in business administration, a member of the MTS Committee, and a member of the ASA International Virtual Chapter (IVC).
Email ran_g@gmtweb.co.il