ADDRESS DATA CLEANSING

A BETTER APPROACH

Runner

Enterprise Data Quality

Oracle's JD Edwards EnterpiseOne

Address Data Cleansing: A Better Approach

The term Undeliverable as Addressed (UAA) and Return Mail (return to sender) are common issues stemming from poor Address Data Quality. Address Data Quality can mean different things depending upon the nature of one's organization, but the negative results are universal no matter what industry you are in. Quantifying exactly what costs are incurred when dealing with poor Address Data Quality is sometimes trivial, however it is established that your costs can be mitigated by using different address verification solutions. The approach and implementation of such address data quality enhancing products are sometimes platform dependent and can vary in the scope or means to which they perform.
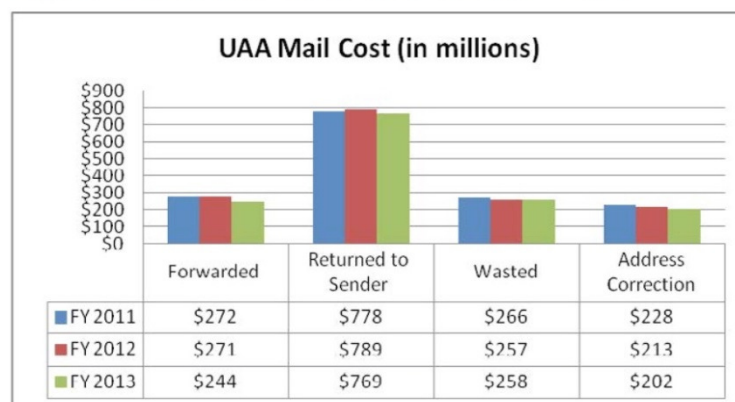
When applied to address records, address data quality can be gauged by the following:

- **The data is standardized.** Each record follows a recognized standard for names, punctuation and abbreviations.

- **The data is accurate.** The address actually exists within the city, state and ZIP Code™ given. In addition, if a person or business is associated with the address in the record, that person or business listed is actually located at that address.

- **The data is up to date.** The name and address in any given record reflect the most current information on that person and business.

- **The data is complete.** Each address contains all of the necessary information for mailing, including apartment or suite number, ZIP Code™ and, if needed, carrier route and walk sequence.

- **The data is not duplicated.** There is only one record per contact for every address in a mailing list.

Every record that fails to meet the above standards of quality can lead to either lost revenue or unnecessary costs. This is true regardless of the size of the enterprise; from a local restaurant to a multi-national conglomerate. In fact, data quality is probably even more crucial for the small to medium-sized business or organization than it is to the large corporation.

Not only does each customer potentially represent a much larger percentage of a small business's sales volume but smaller businesses are generally expected to deliver a higher degree of personal service. Therefore, every misdirected or undelivered parcel or piece of mail has a greater impact on that business's bottom-line than it would for a larger enterprise.

Figure 1: UAA Mail Costs for FYs 2011 – 2013

UAA Mail Cost (in millions)

	Forwarded	Returned to Sender	Wasted	Address Correction
FY 2011	$272	$778	$266	$228
FY 2012	$271	$789	$257	$213
FY 2013	$244	$769	$258	$202

Source: USPS

According to the United States Postal Service® (USPS®) historically 4-5% of all mail is considered Undeliverable as Addressed. On a recent study undertaken by PricewaterhouseCoopers, approximately 23.6% of all mail is incorrectly addressed and requires correction of some kind and an additional 2.7% is completely undeliverable for various reasons. To compound matters, a Gartner Research study found that approximately 40% of all bad addresses are data entry related. Taking the aforementioned issues into consideration, one must consider the importance of having the means in place to combat or correct the problems related to Undeliverable as Addressed mail and the associated costs to your business.

The root causes of return mail are the following:

Invalid Data Entry
- Typing Errors

- Missing Information

- Non-USPS Information

Addressed Changed
- Renamed

- Renumbered

- Reconstruction

Person Moved
- Forwarding Address Expired After One Year

Processing Errors
- Machines

- Humans

The Value of Correcting Your Data:

The USPS currently charges a minimum of $0.21 per mail piece for its address correction service. For a one-time mailing of 10,000 pieces, this could potentially add another $500 to the cost of the mailing. Manual correction more than triples this cost.

Bulk parcels returned as undeliverable cost nearly $2.00 per item. For items sent via delivery services like UPS and FedEx, the cost is $5.00 per item. It isn't difficult to see how these costs can add up in a very short time, diluting profit margins and potentially damaging customer relations. If the address data is used for billing, incorrect addresses cannot only lead to unnecessary expenses, but also delay collections.

The Value of Correcting Your Data Example Using Postage Costs and Mailing Costs:

10,000 pieces of mail x 5% (Avg. UAA Rate) = 500

Postage at First Class rate $.49 x 500 = $245

Printing at $.95 per folded sheet x 500 = $475

Total Cost = $720

Bad address data has multiple points of entry in any organization. If an organization collects sales leads over the web, the customer can either mistype their address or deliberately provide false information. Even if employees of the organization collect the addresses, the possibility for errors still exists.

If an organization buys address lists from a vendor or other third-party, there are also multiple entry points for error. The list may contain errors due to poor quality control by the vendor. One simple component of a data quality initiative is to only patronize list vendors that consistently deliver a quality product. But unlike wine, address data does not improve with age and even an error-free list will not stay that way forever. Customers move, companies merge and go out of business.

Recently, the USPS reported that 45 million people moved and 1.8 million new addresses were created in the United States. The following statistics were extrapolated from those numbers:

- 1 in 6 families move each year

- 14.2% of Americans and 19.3% of Businesses move each year

- 120,000 people move every day

- 5.000 people move every hour

- 83 people move every minute

- 1.38 people move every second

On average, the monthly rate of deterioration of address quality, due to family and individual moves alone is approximately 1.2%. In 6 months, about 7.2% of addresses in address files have the potential to be inaccurate. Poor address data quality cost US businesses $611 billion a year in postage, printing and overhead *plus* the costs associated with losing and alienating customers.

Selecting the Right Approach to Achieve Data Quality

Selecting the right method for ensuring data quality depends on many factors: how the data is acquired, how it is to be used and the amount of data that needs to be processed at one time.
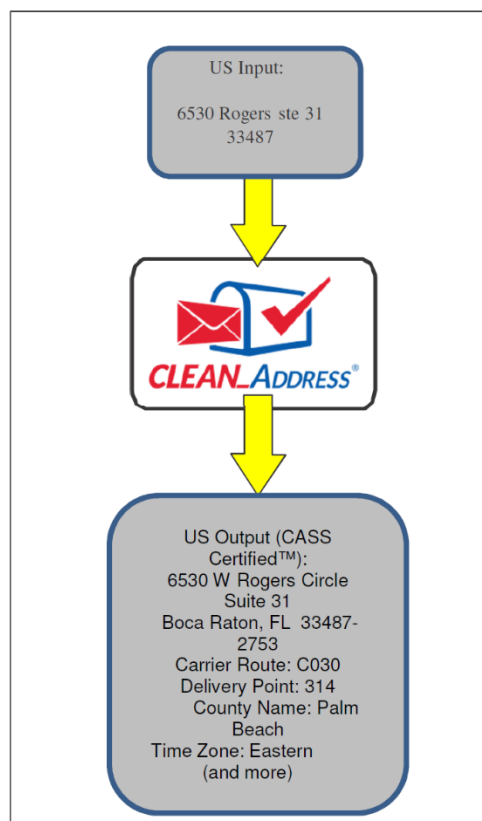
No matter what data quality solution is ultimately chosen, at the very minimum it should accomplish the following:

- Capture inaccurate addresses before they enter your database.

- Process existing records to flag undeliverable mailing addresses for correction or deletion.

- Update current records when information changes (address change, etc.).

- Enhance records by appending related mailing information to the record, (i.e. ZIP + 4$^®$ codes and Carrier Route) for faster processing and discounts.

- Standardize addresses using preferred USPS$^®$ spelling, abbreviation and punctuation.

Using an API

If your organization acquires address data via a web site, you would probably be best served by an address checking component that can be incorporated into a web application. One possible approach is to buy programming tools to be integrated into the application. The advantages of this approach include speed of execution as well as data security (the customer's information never leaves your site after it has been entered). To use the address data for mailings, the address checking logic should be CASS Certified™ to qualify for postal discounts and to assure the address is validated and adheres to the USPS delivery standard.

CLEAN_Address checking tool

US Input:

6530 Rogers ste 31
33487

CLEAN_ADDRESS®

US Output (CASS Certified™):
6530 W Rogers Circle
Suite 31
Boca Raton, FL 33487-2753
Carrier Route: C030
Delivery Point: 314
County Name: Palm Beach
Time Zone: Eastern
(and more)

Using a Web Service

Another option is to use a web service that offers the same functionality as an API. This option has two advantages: it may be a less expensive option if you process a relatively low number of addresses and the web service vendor maintains and updates the postal databases for you.

Another point of entry your own data entry personnel can also be a source of inadvertent errors. The ability to check and standardize an address "on the fly," before it is even stored, will serve to minimize bad addresses. To build an address checking logic into your data entry or CRM systems, consult the address verification tools mentioned above. If you don't have the resources for that sort of development or your systems do not allow that level of customization, you can also purchase a standalone application that accomplishes a similar function.

Using Standalone Software

If you work with lists acquired from an outside source, such as a vendor, or if you choose to process your address data in bulk, there is still more than one option available to you.

The address checking components mentioned earlier should be encompassed in any in-house application. This option requires that you have the necessary resources on-hand to create, develop and maintain this application. However, if you are already using the same object to support a web site, your developers' familiarity with the component's interface can be extended to developing other applications as well. There are products that are available that are directly integrated for your system that would assist in allowing your functional users to complete their data entry without any additional training while maintaining the threshold of address data quality.

If your organization is not large enough to support this kind of effort, you will have the option of purchasing a standalone application that handles the same functions. While this is something of a "one-size-fits-all" solution, it will fill many of the same needs and be ready to run almost from the moment you receive the software.

Another important criterion is that the solution scales well with the growth of your organization. If your approach to data quality works the same with a hundred thousand or a million records as it does with ten thousand, then your operations can grow without worrying about hitting an artificial "ceiling" imposed by a data quality system that you have outgrown.

We would like to thank our partner Melissa Data, Inc. for allowing us to use some of the content provided in this document from their paper: "Scalable Data Quality: A Seven Step Plan For Any Size Organization"

The Integrated Approach with Oracle's JD Edwards EnterpriseOne

Based on the costs incurred through bad address data quality, it makes financial sense to have an address verification solution working within a system (CRM or ERP) that you have invested a great deal of money in. It would be assumed that the solution chosen would meet the requirements mentioned throughout this document in order to provide an organization the best way to maintain the highest data quality standards possible. The ultimate goal for any address verification solution would be to verify, validate, and correct any address being entered into your organization's Oracle's JD Edwards EnterpriseOne system in real-time. The application should also be robust enough to process a table or range of addresses that are existing in the organization's database without having to go through a lengthy import or export of the data.

There are many benefits of having a pre-built integrated solution including:

- No training involved for functional users

- No software development necessary for the technical staff

- Available reporting tools

- No pop-up windows or hot keys to activate the software

- Customizable business rules to set standardization and formatting

An ideal solution should provide interactive address verification and validation functionality as a seamless integration for JD Edwards EnterpriseOne systems. The integration should be performed using Oracle's recommended methodology to ensure compliance with the JD Edwards application and recommended integration approach.

This approach should encompass all entry points:

- JD Edwards EnterpriseOne Address Book

- Web Self-Service Portals

- Batch processing for existing records

By taking a shared integrated implementation approach, this ensures that the user experience is consistent throughout the JD Edwards EnterpriseOne product.

So how should it work? During the JD Edwards address entry process, as the user enters the address, the address should be automatically submitted for verification and validation. The seamless approach should provide the user with a typical data-entry experience. Ideally there should be no extra buttons to press or external applications to install.

During the address entry process, if an incomplete or incorrect address is entered, the address should be corrected, and standardizes by the address verification and standardization solution. In the instances where the solution is unable to correct the address as entered, a friendly list of suggestions should be provided to the end user to assist in correcting the entry, or selecting the valid address from the provided suggestions.