



Data Rules, Data Integrity and Data Audits

The Path to the Best Data Possible with Minimal Programming

ALLEN ROTH

Jewish Federation® of Cleveland



Allen Roth

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TITLE

Director of Business Applications

AT JEWISH FEDERATION OF CLEVELAND

Ten years

HOMETOWN

Cleveland, OH

ABOUT ME

I'm a Cleveland native, and an engineer by degree (OH!). I have worked in many industries and sizes of organizations both as an Engineer and a computer geek (IT). I lead the Jewish Federation Blackbaud Technical Committee. When I'm not at the Fed, you can find me teaching, falling, getting knocked around, hit by frying pans, or shot into the air.



What do I do when I'm not enhancing Blackbaud products?

"Sensei Allen"




Allen Roth is currently a 9th degree black belt and of Tai Shin Doh and Tai Shin Jitsu. Despite being a by many titles, he prefers the simple "Sensei." For the titles or accolades, it's all about the students.

Allen started his study of the martial arts in 1974 Kwon Doh with Sa Bum Nim Ray Szuch, at age 10 years, he made the rounds of the regional tournament earned a spot to compete in the National AAU Martial Arts in Washington DC, for both Kata and Kunitae on the Bo creator Billy Blanks. After achieving this goal, Allen diversified his

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Allen Roth (III)

Actor | Stunts

Allen Roth is known for his work on [Dog Eat Dog](#) (2016) and [Little Evil](#) (2017).

Known For



Dog Eat Dog

Pakistani Chap



Little Evil

Uncle Scott

blackbaud

Blackbaud CRM™ DEVELOPERS' CONFERENCE

**What is this
session about?
Quality data!**

“

Without a systematic
way to start and keep
data clean, bad data will
happen.

DONATO DIORIO

”

Data Quality Statistics

16%

Of companies characterize the data they are using as “very good” (ChiefMarketing)

25-30%

of data becomes inaccurate (MarketingSherpa)

41%

of companies cite that inconsistent data across technologies as their biggest challenge (dun&bradstreet)

20%

Businesses lose as much as 20% of revenue due to poor data quality (Kissmetrics)

50%

Employees waste up to 50% of their time dealing with mundane data quality tasks (MIT Sloan)

1-10-100

On average, it costs about \$1 to prevent a duplicate, \$10 to correct a duplicate, and \$100 to store a duplicate if left untreated (SiriusDecisions)



DATA SOURCES

How accurate is the data you're acquiring?



Information Source: First Party

Information sourced directly from the constituent

- **Most reliable**
 - Obtained via an event registration, staff interaction, or an online donation
- **Our Information Sources**
 - 1st Party: Constituent Self-Reported
 - 1st Party: Online Donation
 - 1st Party: Event Registration
 - 1st Party: Email Subscription





Information Source: Second Party

Information sourced via an associate of the constituent

- **Reasonably reliable**
 - Obtained through a middle man or communicated through a family member or lay leader
- **Our Information Sources**
 - 2nd Party: Family Member
 - 2nd Party: Referral
 - 2nd Party: Affiliate List

Information Source: Third Party

Information sourced from any in-direct means

- **Least reliable**
 - Obtained from online resources, newspaper articles, subscription data services etc.
- **Our Information Sources**
 - 3rd Party: Research
 - 3rd Party: Data Service

Pro Tip: If you're not sure, ask yourself if there's an information middle man? If there is, it's second or third party information.





DATA RULES

**Data rules define required interrelationships
between your data**

Constituent: Email Address



Rule: Every Email address on a constituent must be unique on that constituent (not duplicated)

Reason: For accurate email marketing and to help prevent sending duplicate emails to any constituent

Process: When adding email addresses, review existing current and former email addresses to confirm the address does not already exist on this constituent

Planned Giver



Rule: All constituents who have a planned gift must have both the “Planned giver” and “Prospect” constituencies

Reason:

- i. The Planned giver constituency designates a constituent with a planned gift
- ii. The Prospect constituency creates the “Prospect” record and allows the tie between the constituent and the planned gift

Process: Be sure every constituent who has a planned gift has these two constituencies, and that they do not become end dated, not even when the constituent is deceased.

A woman with long brown hair, wearing a red shirt, is reaching up with both hands to touch a wooden structure. She is looking upwards with a focused expression. In the background, other people are visible, some wearing red shirts, suggesting a group activity or a team-building exercise. The scene is outdoors with trees and a building in the distance.

How can we build an
infrastructure to
enforce data rules?



DATA INTEGRITIES

**A data integrity validates data quality and
returns those records which violate a data rule**

An Integrity is:
TRUE or FALSE

Duplicate Email Address Query

- Identify rule breaking records
- `COUNT() > 1`
- Remember how aggregates work

Edit Ad-Hoc Query - Constituents with duplicate email addresses

Select filter and output fields | Set sort and group options | Preview results | Set save options

Find field:

Browse for fields in: Constituents

- Address (Primary)
- Address Processing Options
- Addressee and Salutation
- Addresses
- Affinity Assignments
- Aliases
- Alternate Lookup IDs
- Appeal Mailing
- Assigned Campaign Team Member
- Assigned Security Groups
- Attachments
- Attributes
- Bank accounts
- Board Member
- Business (Primary)
- Campaign Node Leadership
- Campaign Participation
- Campaign Team Members
- Card Value Snapshot

Select Constituents fields:

Fields

- Age
- Birth date
- Blackbaud Internet Solutions member
- Deceased
- Deceased confirmation
- Deceased date
- Deceased is reviewed
- Deceased source
- Deceased years
- First name
- Formatted name
- Gender
- Gives anonymously
- Inactive
- Inactive details
- Inactive reason
- Industry

Include records where:

- Email Addresses\System record ID is not blank
- and Deceased is equal to No

Results fields to display:

- Constituent record
- Lookup ID
- First name
- Last/Organization/Group/Household name (Last name)
- Email Addresses>Email address
- COUNT(Email Addresses\System record ID)

Let's See



YAY, OUR FIRST INTEGRITY! ...NOW WHAT?

- Make more integrities!
- Remember: Integrity queries indicate records that fail the data rule
- Need a listing of failed rules
- How many records failed, or even better, what records failed?
- Keep it simple for the user!



Integrity = Query

How can this help us?

1. The queries test data rules and display records that fail that rule

2. Queries can have a category

- Integrities Daily
- Integrities Weekly
- Integrities Monthly

3. Queries can be static selections

4. Static selections are static tables within the system with record counts

5. Record the data rule or how to fix invalid records in the query description

A Data Integrity Monitoring System is Born!

1. Create your integrity queries as Static Selections
2. Tag each selection with a category
3. Create a Queue job that refreshes your integrity queries daily, weekly & monthly



Show Me

Data Quality can
seem daunting. Let
your rules and
integrities grow
organically.

Next Steps

- Need to output list of failed data rules and the records that failed that rule
- Query? Good idea, but last run information is INVALID!
- Create an SSRS report
- Deliver report via subscription

The screenshot displays the Blackbaud CRM query builder interface, which is divided into several sections for configuring a query.

Top Navigation: The interface has four main tabs: "Select filter and output fields" (active), "Set sort and group options", "Preview results", and "Set save options".

Left Panel (Browse for fields): This panel shows a tree structure of available fields. Under "Ad-hoc Queries", there is a sub-item "Site".

Right Panel (Select Ad-hoc Queries fields): This panel lists the fields selected for the query, organized into three categories:

- Fields:** Description, Name, Owner, Query category, Type.
- Ad-hoc Query Record:** Ad-hoc Query record.
- Metrics:** Last run by, Last run duration, Last run on, Last run result count (highlighted), Number of times run.

Filter Section (Include records where): This section allows defining filters. A filter is currently set: "Query category is equal to Integrity Weekly".

Results Section (Results fields to display): This section defines the output fields. The selected fields are "Name" and "Last run result count".

**Ok, let's code!
(a little)**



Information library

Ad-hoc Query: Constituents with duplicate email addresses

Name: Constituents with duplicate email addresses Owner:
Type: Constituent Source v
Category: Integrities Weekly Descript
Site: All sites Others c



Administration – Data Integrity Report

Selection Category: Integrities Weekly

☐ Show Selections With Zero Count?

Subtitle (optional): Demo of Weekly Integrities

1 of 1 100% Find | Next



Jewish Federation
OF CLEVELAND

Administration: Data Integrity Report

6/20/2019 12:54:04 AM

Demo of Weekly Integrities

Results (1 record found)

System record ID	Lookup ID	First name
1cddfa60-efdc-49c8-8b11-950fa3...	10039928	Allen

QUERY NAME	DESCRIPTION	RECORD COUNT
Active Recurring Gifts w/o a Connected Pledge Balance	Recurring gifts that don't have an associated pledge to apply periodic payments to	4
Constituents Spouses Without a Payment Ack Salutation	If one spouse has a payment ack salutation, the other spouse must have one	389
Constituents with duplicate email addresses	The email address without a subscription should be deleted and merge other information	1
Constituents with Solicitor Assignments that show Primary as NO	*Constituents whose current campaign solicitor is listed as "NO" data - since last week	27

Data Integrity Report Parameter

- Listing of query categories
- Out of the box simple data list



Simple Data List: Query Category Simple List

System record ID: ef920342-d1b0-4855-934c-1ee4ceb8be3e

Description: Returns a list of categories in use by saved ad-hoc queries and sma

Author: Blackbaud Product Development

Date added: 9/4/2013 5:22:39 PM

Date changed: 2/16/2018 10:17:17 PM

Implementation: SP (USP_SIMPLEDATALIST_QUERYCATEGORYINUSE)

Installed products:

Installed:  Yes

Data Integrity Report

Data Source

```
declare @PAGEID uniqueidentifier
set @PAGEID = (select ID
               |
               |
               |
               from PAGEDEFINITIONCATALOG
               where name = 'Ad-hoc Query Results')

select a.NAME, a.DESCRPTION, s.NUMROWS,
       dbo.UFN_ALERT_GETAPPLICATIONLINK(@PAGEID, a.ID) as QUERYURL
from ADHOCQUERY a
inner join dbo.IDSETREGISTERADHOCQUERY i on i.ADHOCQUERYID = a.ID
inner join IDSETREGISTER s on i.IDSETREGISTERID = s.ID
where a.QUERYCATEGORYCODEID = @QUERYCATEGORYCODEID -- SP Parameter
and NUMROWS <> 0 and NUMROWS is not null
order by a.NAME
```

What's It Look Like Live?

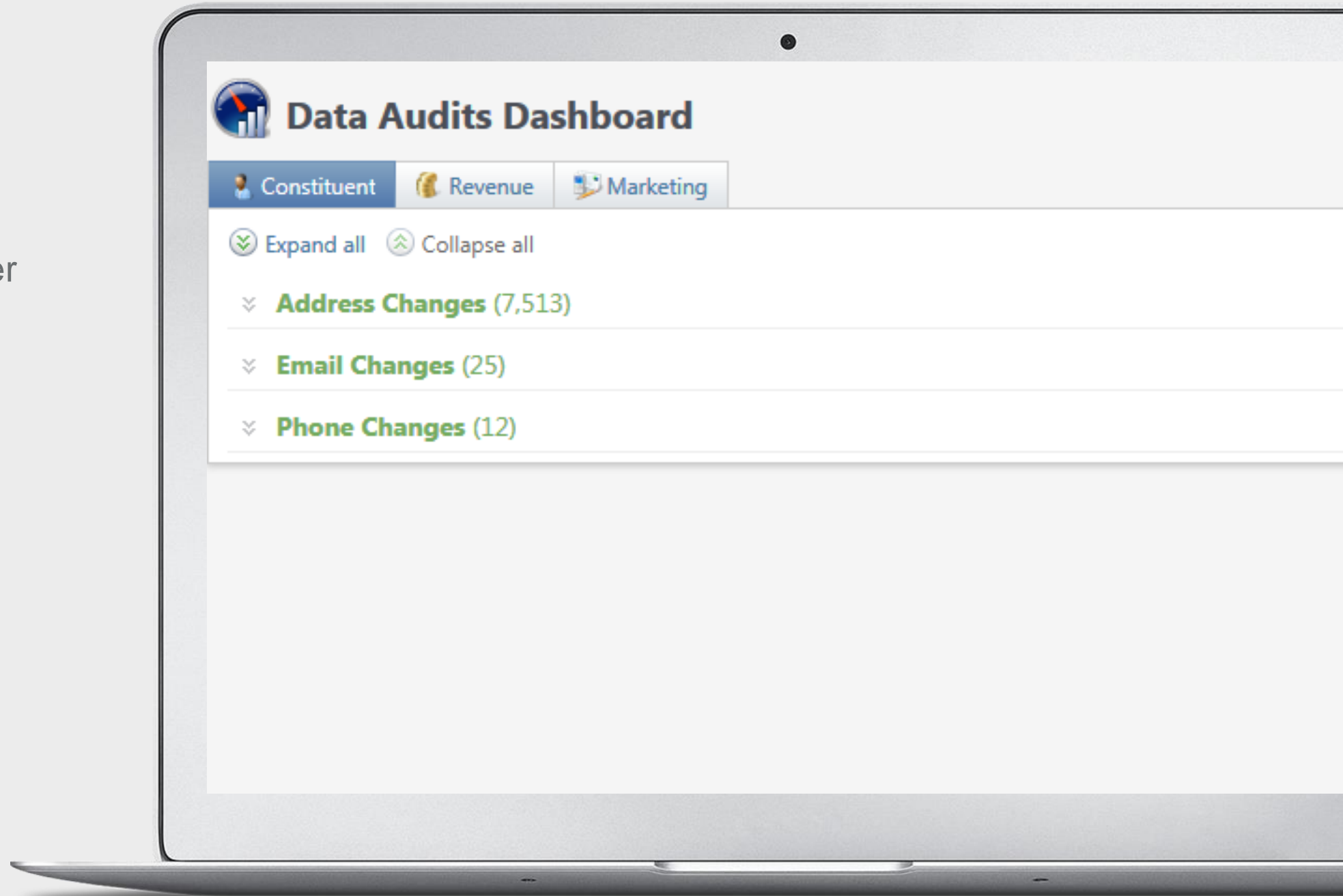


DATA AUDITS

Data audits display data that must be evaluated by a human to determine its quality

Data Audits

- Use Page Designer
- Create a page
- Create data lists
- Make it easy for users to monitor quality



Data Audits Dashboard

Constituent

Revenue

Marketing

Expand all Collapse all

Address Changes (7,513) Filters More

Lookup ID	Name	Type	Address	City	State	Zip
BLACKBAUDHOST\AjayMi						
0101504	01-001 Exec Staf...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0101506	01-104 Womens...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0101508	01-130 M.P. Fou...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0101505	01-900 Rabbinic...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0020016	02-003 Human R...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0020017	02-004 Wkr Com...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0020018	03-101 Applied...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0020019	04-105 Child Care	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0020020	05-110 RHMA M...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302
0020021	05-111 RHMA A...	Office	Mandel Building 25701 Science Park Drive	Cleveland	OH	44122-7302

Audit Data List

- Show recent adds or changes
- Allow users to review and go to ...
- We group by user who added record
- Show details of when it was added and changed



Benefits of Data Quality Efforts

- A+ Data Health Scorecard
- Increased data confidence
- Issue root causes identified and fixed quickly
- Improved processes
- Targeted process training
- And...

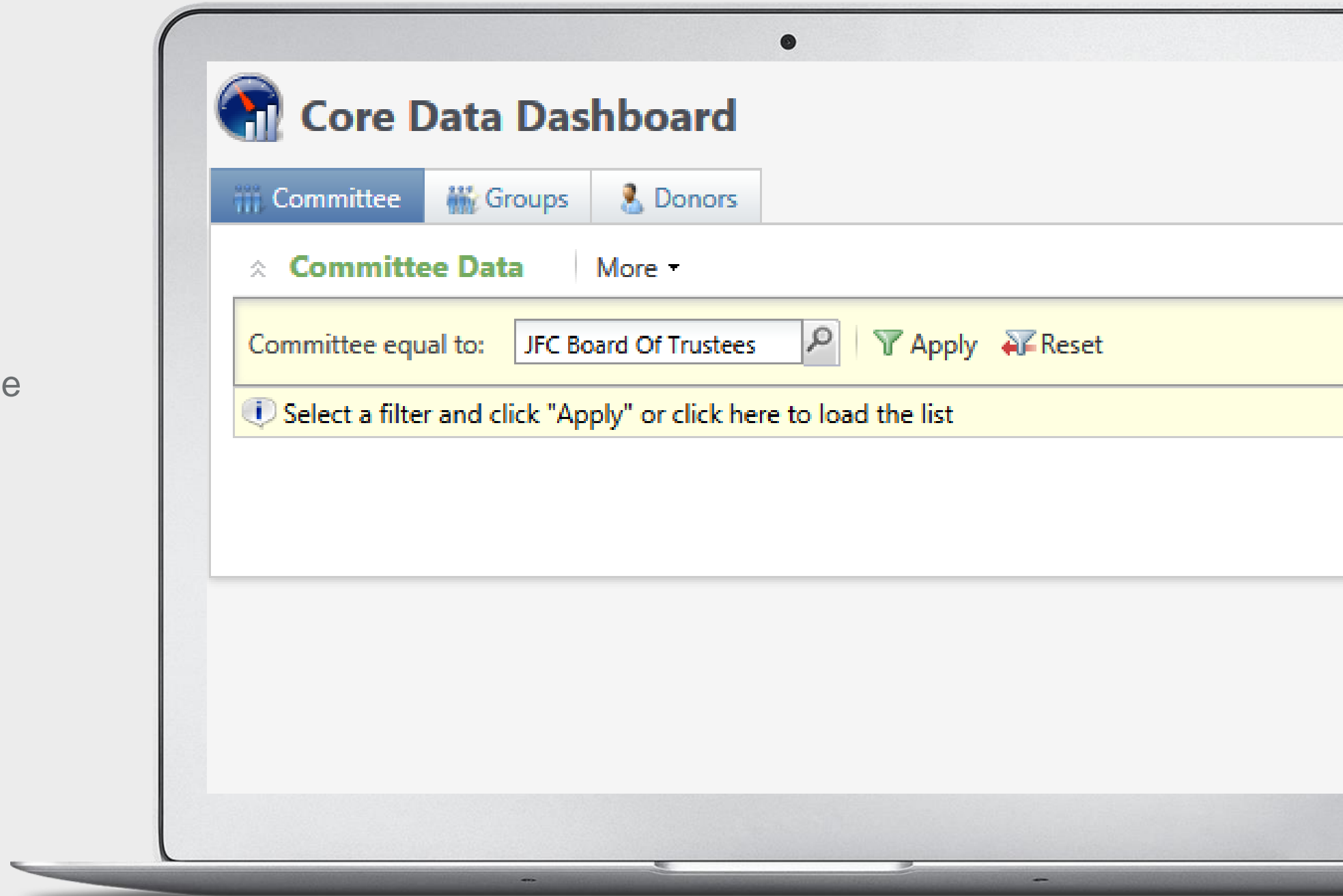


CORE DATA

**Most critical data necessary to maintain
business continuity**

Core CRM Data (for us)

- Selected committee information
- Selected group information
- Selected donors based on recent giving



Q & A

LET'S CONNECT



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facebook.com/allen.roth.121



linkedin.com/in/alleniroth

THANK YOU!

