



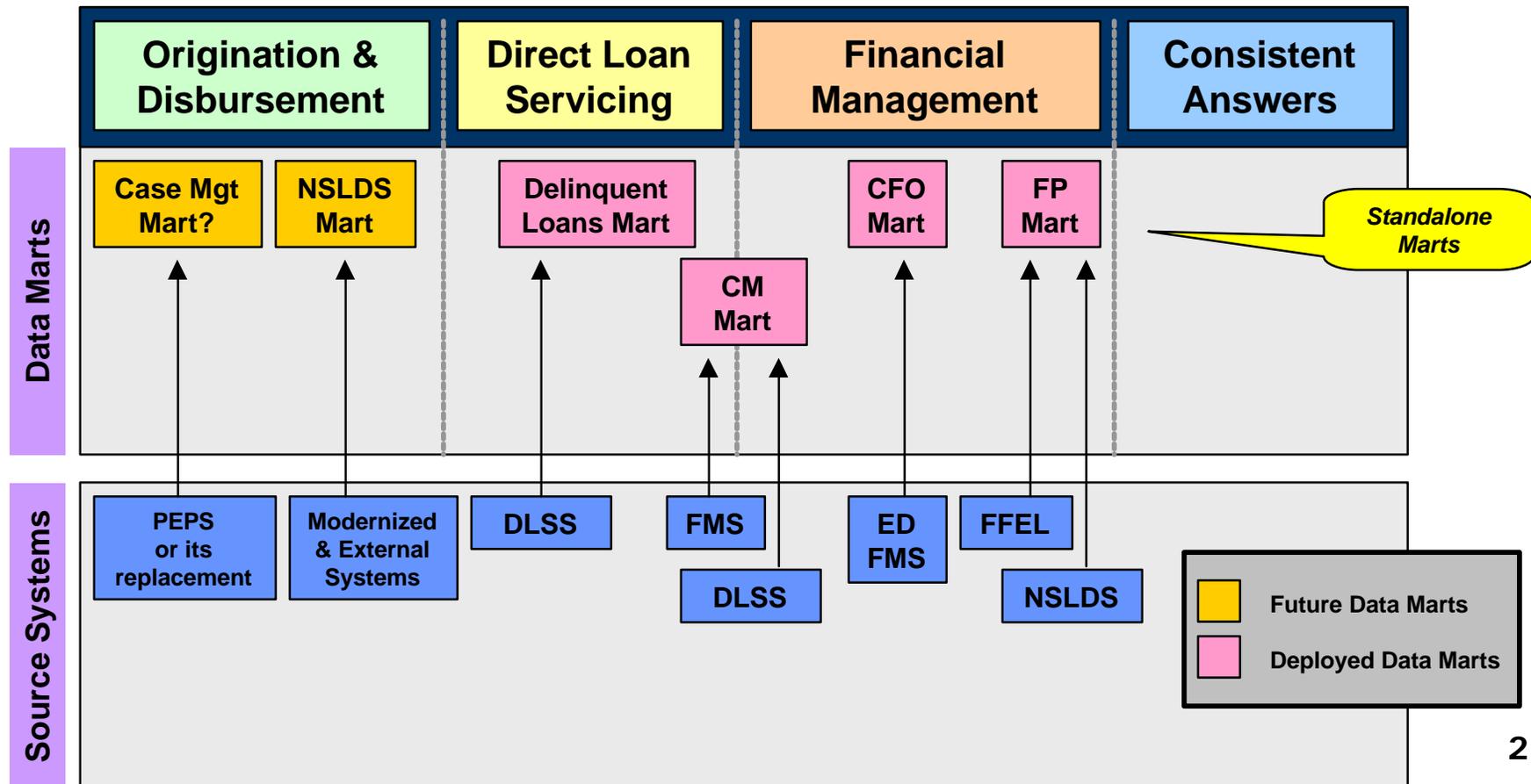
SFA Modernization Program

***Enterprise Data Warehouse
Data Mart Integration Framework, 2001
2/15/02***



What was the opportunity?

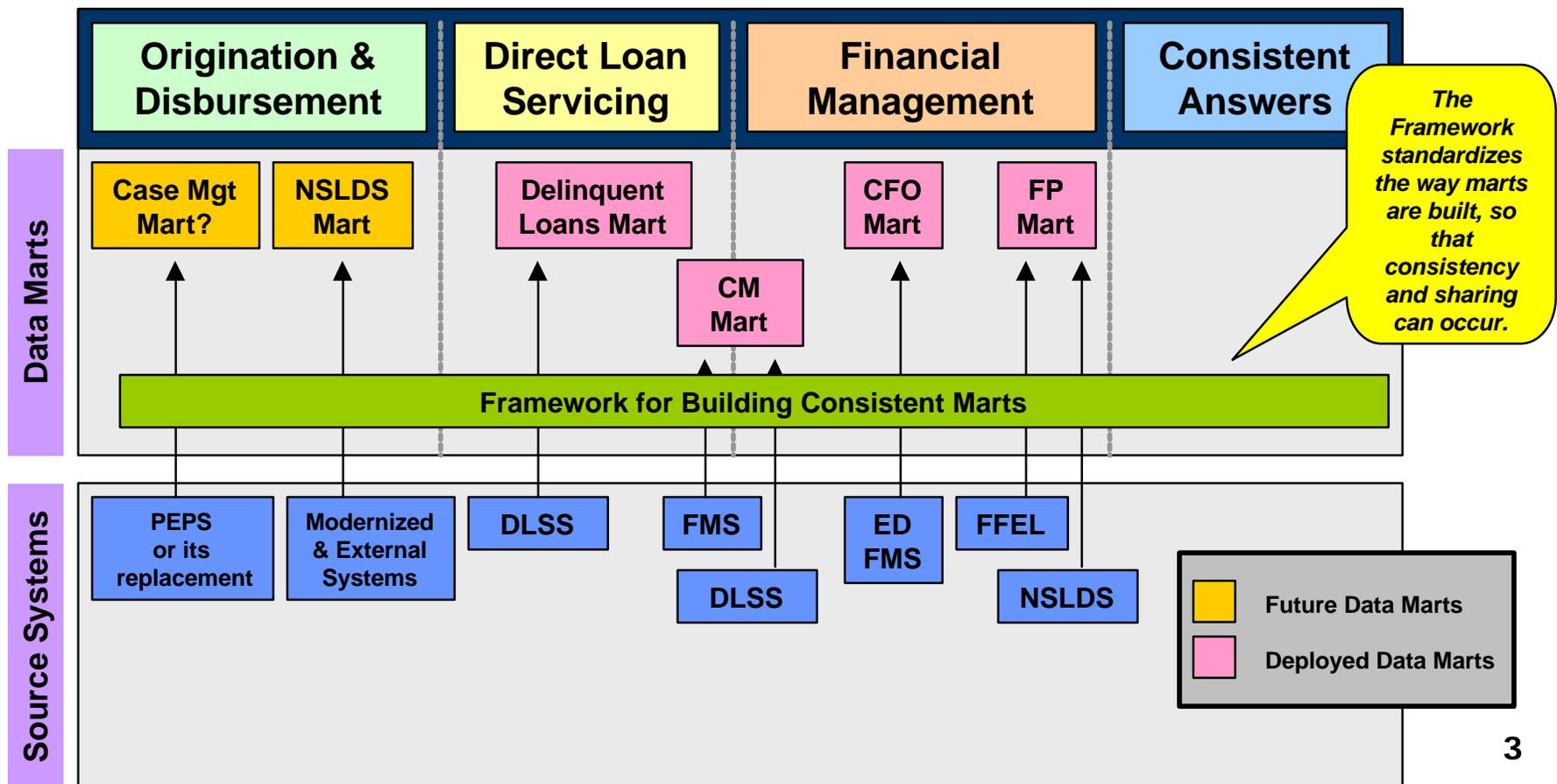
Today's data marts, which were built as point solutions for immediate problems, are standalone. Can integration help us achieve greater value from our data mart investments?





What is the strategy?

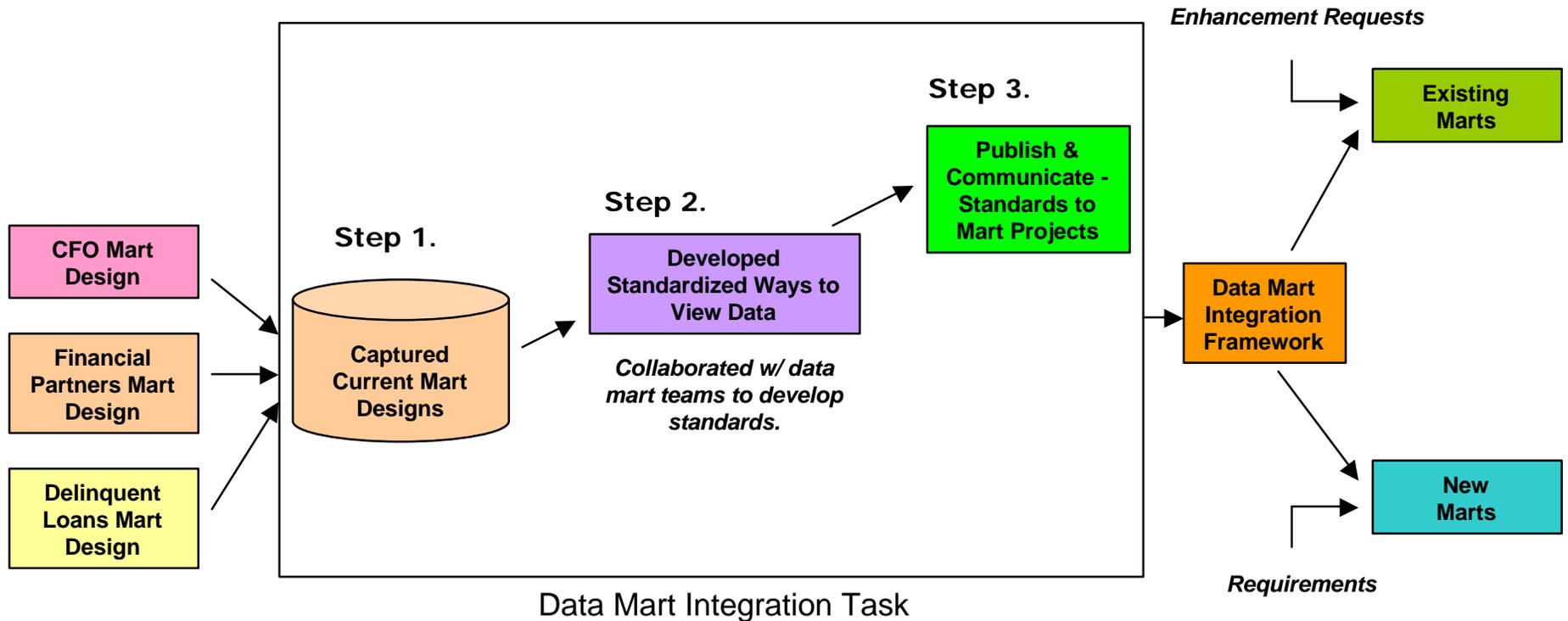
A framework for building 'shareable' marts that streamlines and coordinates mart development





What was the approach?

The Framework has been developed by using existing mart designs.



What are the key benefits of adopting the Framework?



- ✓ **Marts share common user interface elements (usability)**
 - Example – both the Delinquent Loans mart and the Credit Management mart use the School dimension, which are set up for their own rollup/drilldown needs. With consistent set up of the School dimension as recommended in the Framework, both user groups could consistently slice their metrics by ‘school type’ for a metric such as “Average days delinquent”.

- ✓ **Facilitates future cross-mart data analysis**
 - Example – continuing with the above School dimension, the Framework can enable cross-mart analysis of “Average days delinquent” by school in DL mart to “Average Principal Outstanding” by school.

- ✓ **Streamlines data mart development**
 - New data mart development can begin with the dimensions set in the Framework, rather than starting anew.

What is the Data Mart Integration Framework?



We have standardized ten common dimensions that are in today's marts, by working collaboratively with data mart SMEs.*

Existing marts have several more dimensions than just these ten, but those dimensions tend to be of interest only to that mart (e.g. Budget dimensions in the CFO mart).

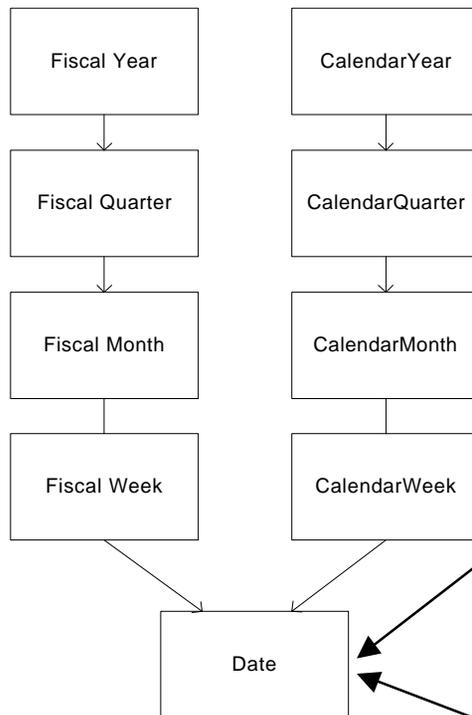
Proposed Common Dimensions	Applicability to Current Marts			
	CFO Mart	FP Mart	DL Mart	CM Mart
School			X	X
Borrower			X	X
Loan Type		X	X	X
Lender		X		
Guaranty Agency		X		
Fund	X			
Date	X	X	X	X
Address		X	X	X
Grant				
Servicer				

**See attached charts for detail on dimensions*



Example: Date Dimension

Recommended Date Drill Path



With consistent implementation of the Date dimension in both CFO or FP marts, both the CFO and FP users could reliably perform comparative analysis.

For example, comparing “Reinsurance amounts” by date rollups, by GA in the FP mart to “Actual amounts paid” by the same date rollup and by GA from the CFO would be facilitated by the standard dimensions in the Framework.

FP Mart



CFO Mart



What is the Data Mart Integration Strategy?



- Standardized Dimensions = “Federated Data Marts”
- The data mart infrastructure we have can support this (MicroStrategy, Oracle database, and Informatica)



What are the next steps for marts?

Next steps for current marts

- Do nothing without new business requirements
- Wait for an enhancement need to adopt Framework

Recommended approach for new marts

- Consider cross mart opportunities vs. building new mart (will enhancement to existing mart meet requirement?)
- Consider what needs to be added to the federation of marts to meet requirements vs. building new standalone mart.

How do we keep the Framework current or “evergreen”?



- In the event that new requirements drive changes to the Framework, work with the SFA Data Warehouse team to get the standards updated.
- The SFA Data Warehouse team will facilitate the changes and communication to affected teams. Key contact: James Greene, SFA-CIO Data Warehouse Architect 202-377-3560.
- For data mart teams that are adopting the Framework – involve the SFA Data Warehouse team in both the initial and final design phases. Compliance with standards will be reviewed as part of the existing Production Readiness Review (PRR) process.



Data Mart Integration Framework

Attachment - Dimension Details

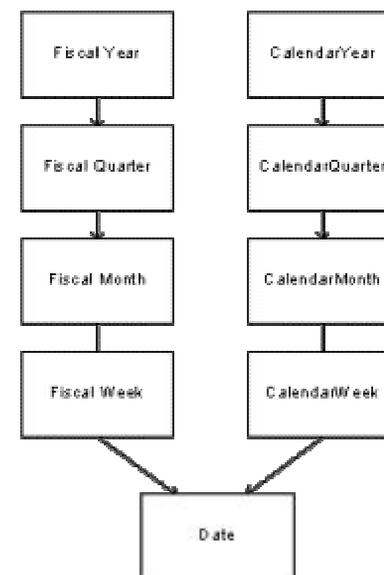
Data Mart Integration Framework

Dimensions



The Date Dimension	
Attribute Name	Attribute Description
Date Id	The specific date that an activity took place
Date Desc	The description of the specific date that an activity took place
Calendar Week Id	The identifier of the calendar week associated with a specific date; week ending date is always a Saturday.
Calendar Week Desc	The description of the calendar week associated with a specific date
Calendar Month Id	The identifier of the calendar month associated with a specific date
Calendar Month Short Desc	The short description of the calendar month
Calendar Month Long Desc	The long description of the calendar month
Calendar Quarter Id	The identifier of the calendar quarter associated with a specific date; a grouping of 3 calendar months
Calendar Quarter Short Desc	The short description of the calendar quarter
Calendar Quarter Long Desc	The long description of the calendar quarter
Calendar Year Id	The calendar year
Fiscal Week Id	The identifier of the fiscal week (based on the financial calendar) associated with a specific date; week ending date is always a Saturday
Fiscal Week Desc	The description of the fiscal week associated with a specific date
Fiscal Month Id	The identifier of the fiscal month associated with a specific date
Fiscal Month Short Desc	The short description of the fiscal month
Fiscal Month Long Desc	The long description of the fiscal month
Fiscal Quarter Id	The identifier of the fiscal quarter associated with a specific date; a grouping of 3 fiscal months
Fiscal Quarter Short Desc	The short description of the fiscal quarter
Fiscal Quarter Long Desc	The long description of the fiscal quarter
Fiscal Year Id	The fiscal year; grouping of 52 fiscal weeks / 12 months that comprise the fiscal year

Recommended Drill Path



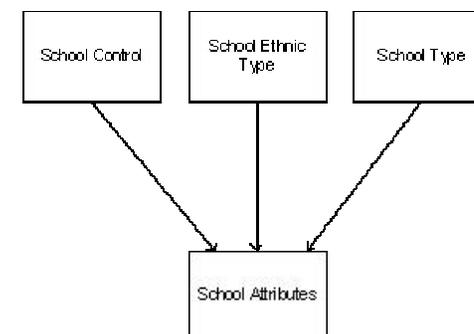
Data Mart Integration Framework

Dimensions



The School Dimension	
Attribute	Description
School Id	Unique identifier for the school
School Address Id	School address identifier, used to link up to address dimension table to retrieve school address information
School Congressional District ID	The congressional district for a school
School Short Name	The short name description of a school
School Long Name	The long name description of a school
School Code Desc	The school code description
School Wan Inst Name	Wan instance name for a school
School Wan Participation Year	Wan participation year for a school
School Wan Title4 Address	Wan title IV address for a school
School Wan Cycle	Wan cycle for a school
School Wan Format Code	Wan format code for a school
School Wan Switch	Wan switch for a school
School Dun Number	Dun Number for a school
School Control Desc	Control description for a school (public, private, foreign, etc.)
School Ethnic Type Desc	Ethnic type description for a school (native american, hispanic, historically black, etc.)
School Type Desc	School type description (two year school, four year school, etc.)

Recommended Drill Path



Data Mart Integration Framework

Dimensions



The Borrower Dimension	
Attribute Name	Attribute Description
Borrower Id	Unique identifier for a borrower
Borrower Address Id	Borrower address identifier, used to link up to address dimension table to retrieve borrower address information
Borrower Congressional District ID	The congressional district for a borrower
Borrower Social Security Number	Social Security number of a borrower
Borrower First Name	The first name of a borrower
Borrower Middle Initial	The middle initial of a borrower
Borrower Last Name	The last name of a borrower
Borrower Birth Date	The birth date of a borrower
Borrower Home Phone Number	The home phone number for a borrower
Borrower Home Phone Number Condition Flag	A condition flag indicating whether a home phone number is valid or not for a borrower
Borrower Email Address	The email address of a borrower
Borrower Email Address Condition Flag	A condition flag indicating whether an email address is valid or not for a borrower
Borrower Business Phone Number	The business phone number of a borrower
Borrower Business Phone Number Condition Flag	A condition flag indicating whether a business phone number is valid or not for a borrower

Data Mart Integration Framework Dimensions



The Address Dimension	
Attribute Name	Attribute Description
Address Id	Unique identifier for a specific address location
Address Street Address Line 1	Line 1 of the street address for a specific address location
Address Street Address Line 2	Line 2 of the street address for a specific address location
Address City Id	The identifier for a specific city where an address is located
Address City Desc	The name of the city where a specific address is located
Address State Code	The state code of the state where a specific address is located
Address State Desc	The name of the state where a specific address is located
Address Zip Code	The 5 digit zip code for a specific address location
Address Zip Code Plus 4	The full 9 digit zip code for a specific address location
Address Region Id	The identifier for a specific region associated with an address location
Address Region Desc	The name of the region associated with an address location
Address Condition Flag	A condition flag indicating whether an address is valid or not
Address Foreign Address Flag	A flag indicating whether an address is within the United States or if it is a foreign address

The Loan Type Dimension	
Attribute Name	Attribute Description
Loan Type Id	Unique identifier for a specific type of loan
Loan Type Acronym	The acronym for a specific type of loan
Loan Type Desc	The description of a specific loan type

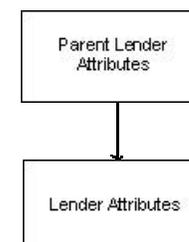
Data Mart Integration Framework Dimensions



The Grant Dimension	
Attribute Name	Attribute Description
Grant Id	Unique identifier for a specific grant
Grant Desc	The description of a specific grant

The Lender Dimension	
Attribute Name	Attribute Description
Lender	Unique identifier for a specific lender
Lender Address Id	Lender address identifier, used to link up to address dimension table to retrieve lender address information
Lender Name	The name of a specific lender
Lender Active Flag	A flag indicating whether a lender is active or not
Lender Parent Lender Id	Unique identifier for a lender's parent lender
Lender Parent Lender Name	The name of a lender's parent lender

Recommended Drill Path



The Guaranty Agency Dimension	
Attribute Name	Attribute Description
GA Id	Unique identifier for a specific guaranty agency
GA Address Id	Guaranty agency address identifier, used to link up to address dimension table to retrieve guaranty agency address information
GA Name	The name of a specific guaranty agency
GA Contact Name	The contact name for a guaranty agency
GA Contact Phone Number	The contact phone number for a guaranty agency
GA Active Flag	A flag indicating whether a guaranty agency is active or not
GA Revised Agency Name	The revised agency name for a guaranty agency

Data Mart Integration Framework Dimensions



The Servicer Dimension	
Attribute Name	Attribute Description
Servicer Id	Unique identifier for a specific servicer
Servicer Address Id	Servicer address identifier, used to link up to address dimension table to retrieve servicer address information
Servicer Name	The name of a specific servicer

The Fund Dimension	
Attribute Name	Attribute Description
Fund Id	Unique identifier for a specific fund
Fund Desc	The description for a specific fund
Fund FY Id	Identifier for a funding fiscal year
Fund FY Desc	The funding fiscal year description

Recommended Drill Path

