



Analytic Ready Data At Scale on Microsoft Azure

September 2019

What ZettaSense Does

- We help companies **manage their data as a financial asset**, meaning that our software:

1. Inventories Data

2. Assesses Its Quality

3. Cleans & Remediates It

4. Packages it for Distribution

5. Tracks its consumption and value

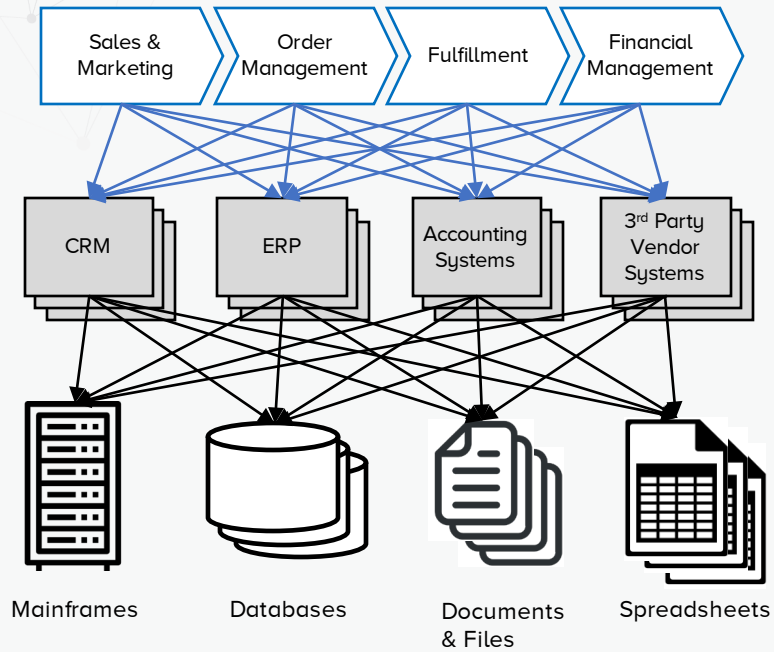
increasing business value

Why This Is Important

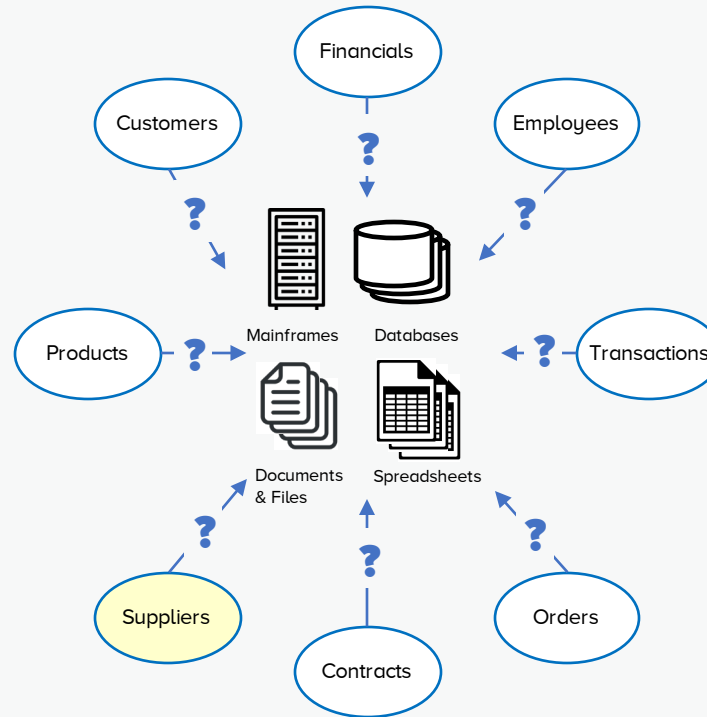
- The successful companies of the future will be the ones to harness their data for competitive advantage
- However, most enterprises today still have immature practices for managing their data...
 - Valuable information spread out across hundreds of documents, spreadsheets, databases, etc.
 - Don't know where useful data is
 - Don't know which data is most valuable to the company
 - Data conflicts and doesn't reconcile; no single versions of "truth"
- ...and current tools are built mostly for developers and IT personnel; in order for data to be treated as a valuable business asset, we need data tools built for business people

The Data Asset Management Problem

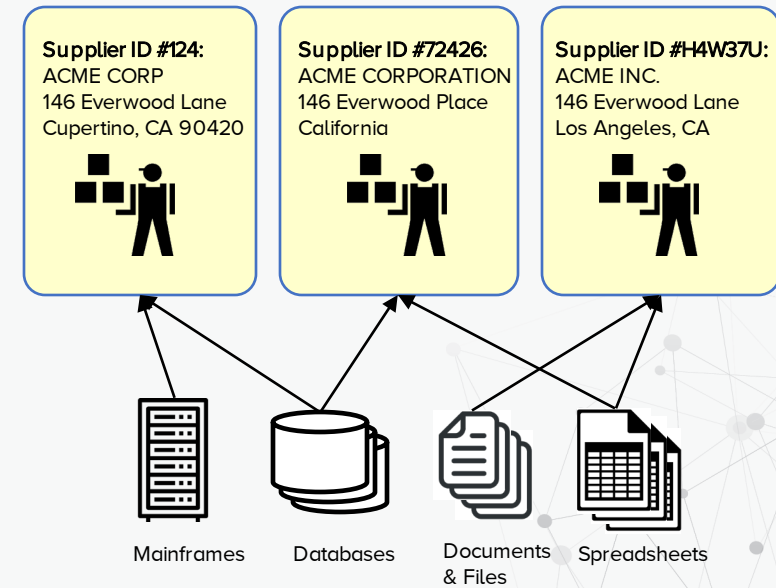
Data is created from many processes and in multiple formats



The more data there is, the harder it is to find what you're looking for...



...and the harder it is to reconcile, find facts and keep clean



Not being able to effectively manage data as an asset leads to missing / poor data quality, bad management decisions and an inability to take advantage of advanced analytics

Data Asset Management is especially important in Financial Services

Because of Bad Data Asset Management, Most Large Banks Today Still Can't...

- Count how many customers they have across all product relationships
- See a complete view of one customer's activity across all of their banking relationships
- Compute all of their exposures across all of their counterparties
- Fully reconcile position and balance amounts across different functions (such as Risk and Finance)

Which has led to...

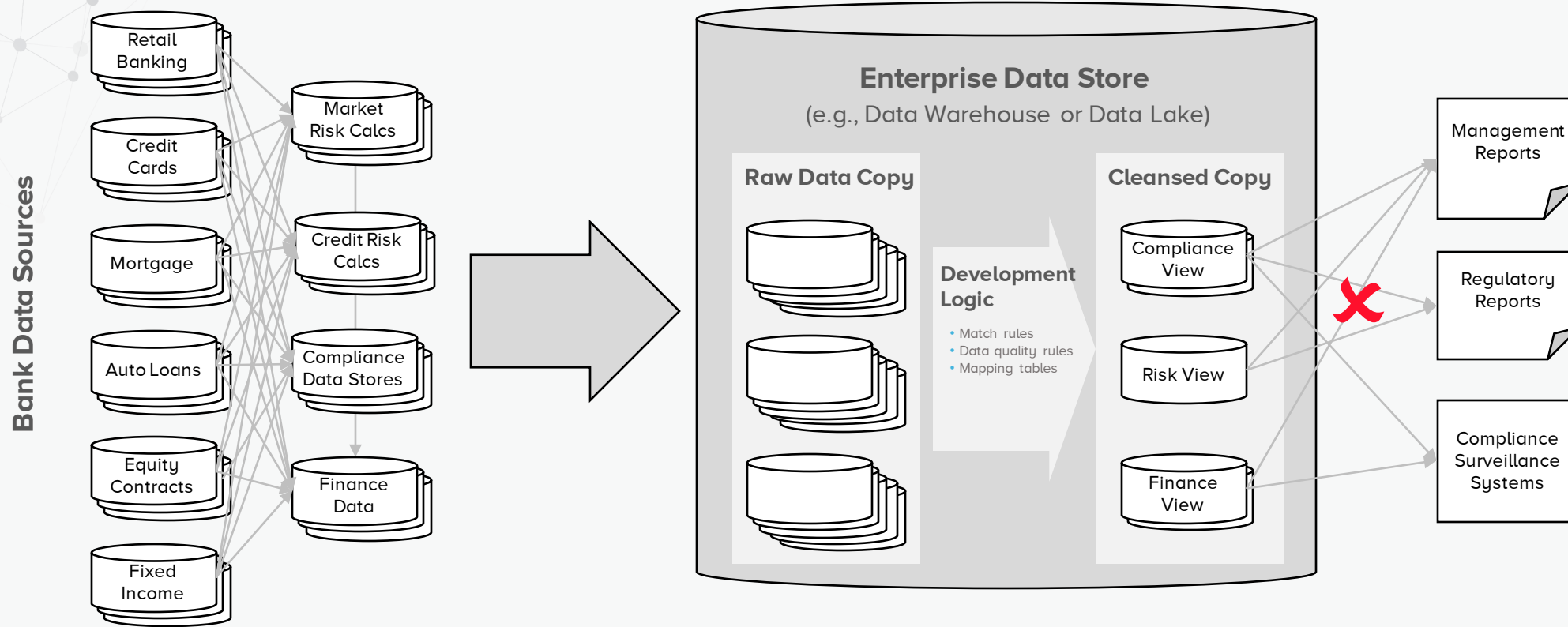
- ✗ Business decisions made based on stale and inaccurate data
- ✗ Incorrect information submitted to regulators
- ✗ New regulations imposed focused on ensuring data governance
- ✗ New penalties imposed, including criminal liability for individual Executives
- ✗ More regulatory actions issued (e.g., Bank fines, Cease & Desist orders)

The Office of the Comptroller of Currency on average issues 600+ new supervisory actions per year due to bad data and IT infrastructure

Source: United States Government Accountability Office, BANK SUPERVISION - Regulators Improved Supervision of Management Activities but Additional Steps Needed (May 2019)

Current Approaches to Data Management Haven't Borne Fruit

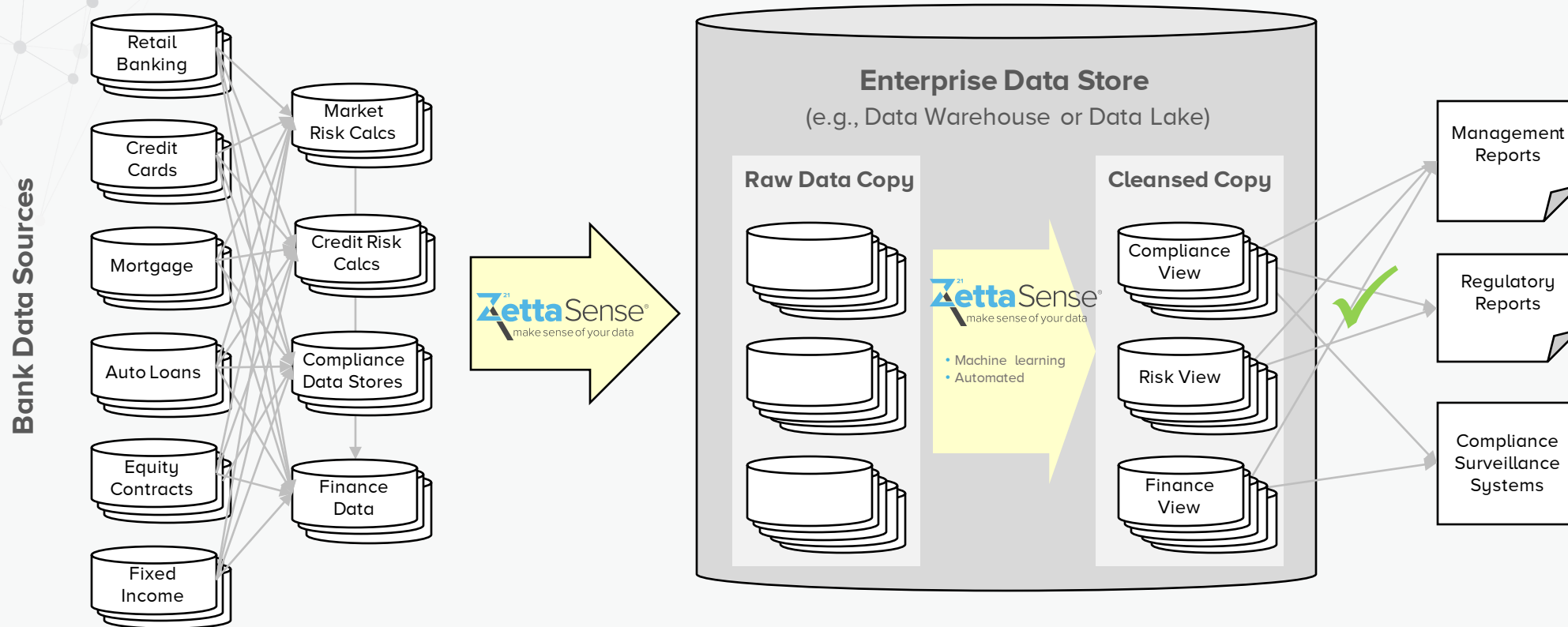
IT Invested Millions in Enterprise Data Warehouses and Data Lakes But...



- ✗ It is **too slow**: after years of investment only 5-15% of a Bank's total data is ever processed
- ✗ It is **too slow**: it takes 6 – 8 months to add and clean new data sources
- ✗ It is **too expensive**: the average Enterprise Data Initiative can run \$150 million at a Tier 1 bank
- ✗ It **didn't solve the problem**: Data not reconciled, still of poor quality, and there is no transparency to chain of custody

ZettaSense is our Answer to the Problem

ZettaSense software piggybacks onto the enterprise IT infrastructure but actually solves the problem



- ✓ It is **built for scale**: It can process billions of records and clean 90% of the Bank's total data
- ✓ It is **fast**: new data sources can be added and cleaned within days and weeks, not months
- ✓ It is **smart**: it removes developer programming logic with machine learning to automate data cleaning
- ✓ It is **cheap**: the total cost of operation is 1/20th the current approaches

How We Solved The Problem

We Used To...

- Have developers program lots of code to link and match data (ETL & SQL)
- Program thousands of business rules to measure data quality
- Hire large data management teams to manually remediate poor or missing data

But Now We Can...

- Use **heuristics** (instead of rules and code) to **teach machines** how to spot and fix data quality issues
- Have machines programmatically scan billions of rows of data and merge / fix them
- **Crowdsource Human Expertise:** have anyone at an organization teach the machine how to improve quality (rather than dedicated large data management teams)
- Do this with **No Programming!!!** (No ETL & No SQL)

Which leads to...

- A way to generate and link golden sources of customer, product, account and transaction master data
- A true repository of all organization activity, reconciled to official books and records (transactions, positions, balances)
- An ability to view all activities of a customer, across all of their product relationships

This New Approach Really Solves the Problem

Use Case / Problem	How It's Done Today	Our Approach	Customer Benefits
<ul style="list-style-type: none"> Poor data quality feeding Anti-Money Laundering (AML) monitoring systems 	<ul style="list-style-type: none"> Transactions fed and integrated in expensive Compliance Data Warehouse Generates only 40% of the necessary data for monitoring 	<ul style="list-style-type: none"> Run customers, counterparties and 2 billion transactions through our smart data resolution wizards 	<ul style="list-style-type: none"> Data quality improved from 40% to 98% within 3 months Near immediate reduction of false positive AML alerts by 35%
<ul style="list-style-type: none"> Inadequate aggregation of Counterparty Credit Risk exposures 	<ul style="list-style-type: none"> \$100+ million investment in new Contracts / Positions / Balances data warehouse Complex mapping tables and matching logic to aggregate counterparties 	<ul style="list-style-type: none"> Use ZettaSense Counterparty resolution wizard to enrich positions with legal and risk hierarchy data 	<ul style="list-style-type: none"> Improved Basel III credit risk reporting and transparency Opportunity to reduce RWA by 5% leading to 40 bps improvement in Tier 1 Capital Ratio
<ul style="list-style-type: none"> Inability to reconcile Risk and Finance views of exposures and balance sheet 	<ul style="list-style-type: none"> Risk and Finance each independently source data directly from product sub-ledgers, and enrich and transform to suit their own independent purposes 	<ul style="list-style-type: none"> Integrate front office product and back-office sub-ledgers into common transaction repository to be shared by Risk and Finance Use ZettaSense Transaction resolution wizard to match, integrate & reconcile into a single cleansed view of transactions 	<ul style="list-style-type: none"> Simplifies traceability and lineage of data used by Risk and Finance Addresses regulatory actions related to both BCBS 239 and qualitative assessment of CCAR stress testing processes