



emStream

Big Data & Analytics Stack



WebTrust Certified Company



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A sophisticated stack designed to cater to bespoke requirements in analytics focused at sentiment, risk, and fraud.

Interactions today are becoming increasingly multi-channel and real-time in a speed that is difficult, yet important to keep up with. Consequently, so are the risks associated with inadequate brand management that are not on par with today's market demands.

Interestingly, we have noticed that this pattern does not simply apply to brand management but also applies in general to various elements of risk and fraud across Banking and other industries. Globalization and selective disclosure that facilitate consumer level fraud have wrecked havoc on many financial institutions.

emStream is eMudhra's Analytics stack working on a Big Data Layer which can be used to address bespoke requirements in Sentiment, Fraud, and Risk analytics.

Modular Architecture

emStream is architected using a modular architecture with three main components - data aggregators, processing engine and visualization. With support for data ingestion across a range of data sources, emStream's core engine runs on a Apache Spark cluster for Natural Language Processing and Predictive Analytics tasks.

Computed data is stored in a NOSQL data store allowing visualizations to be done on popular visualization tools.

Benefits

- Superior NLP Technology enabling more robust analytics capabilities
- Scalable platform built on a Big Data stack for large scale projects
- Ability to combine relational DB with unstructured data for a comprehensive output
- Versatile Data Ingestion Engine with pre-built & custom data feeds
- Easy visualization through Qlik or Tableau

Abundant data sources, easy set-up, distributed processing, advanced NLP, Predictive Analytics and more...

Omni Channel Data Aggregation

emStream has ready feeds from popular social media platforms. However, it is capable of data ingestion from excel, email servers, sms servers, websites, blogs, RSS feeds, video/image input, and even relational databases within your organization. You define what you want, and emStream gets the data (keeping in mind data privacy regulations of course!)

Proprietary NLP built for accuracy

Over a decade of work has gone into our NLP engine which is fully proprietary. A combination of domain ontology on top of data helps us establish sentiment to specific attributes with high accuracy. Apart from a plethora of features that our NLP enables us to provide, we even offer contextual NLP where we expand graph theory to resolve entities against known databases.

Predictive Analytics

emStream's deep expertise in structured data analytics through use of tools like R, WEKA and analysis of unstructured data through Natural Language Processing puts it in a sweet spot to map customer profile, transaction and sentiment data across all channels and use these on large scale HADOOP clusters to predict customer behaviour real time.

Natural Language Processing Layer

- Name Entity Recognition (NER) Engine to identify Names, Dates, Numbers, Places, Organizations etc
- Extraction of Events
- Anaphora Resolution & Co-reference Chains
- Sentiment, Problem & Intent Analysis
- Topic Identification
- Theme Extraction
- Auto Summarization of Text
- Verb Argument Extraction

Technical Details

Data Aggregators:

Local Data Adapter
DataShift Adapter
TW, FB Adapter
URL Crawler



Distributed Processing:

Named Entities
Sentiments
Topics



Distributed Storage:

mongoDB
elastic



Distributed Analytics:

Classification
Clustering
Association
Predictive Analysis
Anomaly Detection



Use Cases

Government

Media Monitoring across multiple sources of news and media focusing on risk analytics, sentiment analytics, and influencer analysis.

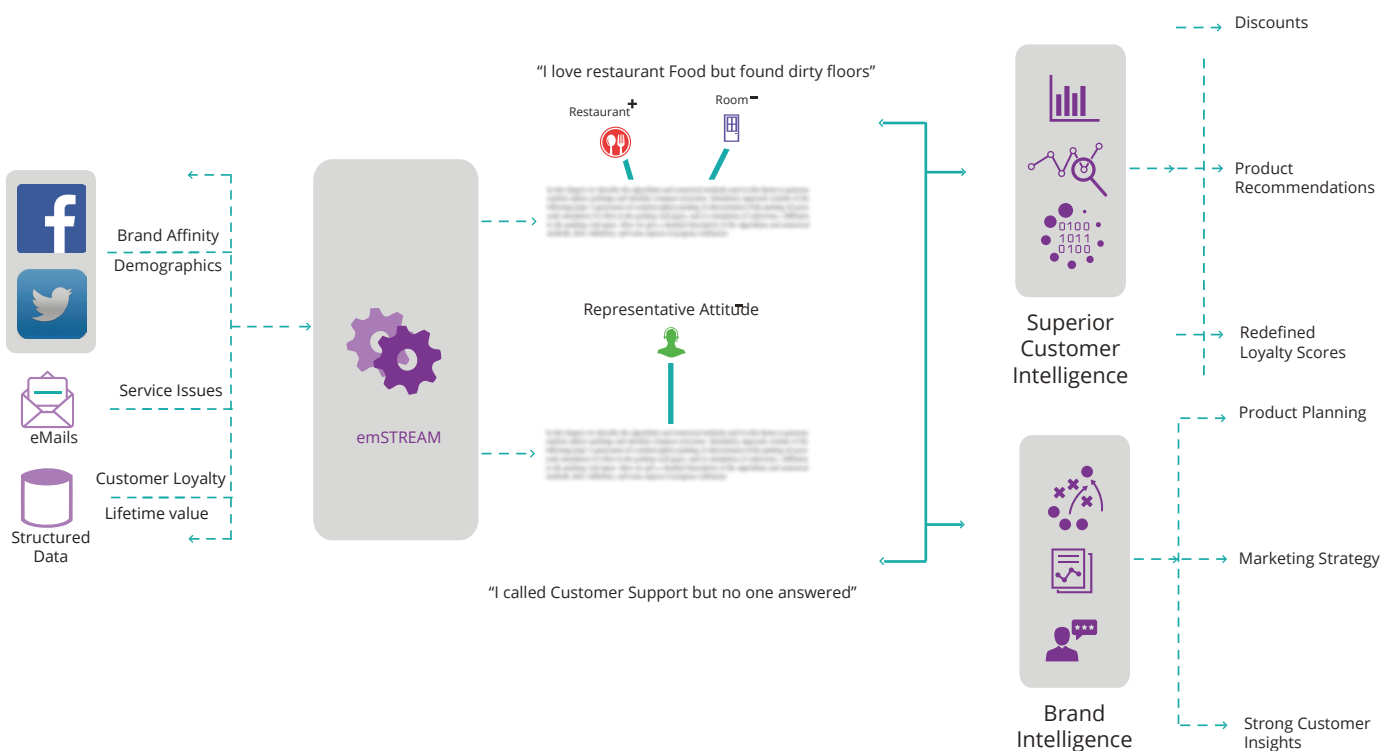
Banking

Fraud analytics aimed at loan fraud mitigation
Consumer analytics focused on credit card churn
Omnichannel customer support analytics

Other Use Cases

Individual targeted offers for retail/eCommerce
Brand monitoring for PR/Media Agencies
Chat/email analytics for compliance in Enterprises

Sample flow - Sentiment Analytics



About eMudhra:

eMudhra is a global entity and leading trust service provider focusing on Digital Transformation and Cybersecurity initiatives. Headquartered in Bengaluru, India, eMudhra has global offices across 5 continents catering to thousands of customers across the globe. eMudhra also holds the Vice chairmanship of Asia PKI Consortium, Chairmanship of the India PKI Consortium, and is a member of the UN council on Blockchain.



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