

Customer Social Profiling- Synd Vivran (सिंड विवरण)

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Social media started as an environment for individuals, but brands quickly took notice of the opportunity for personal interaction. Currently, top social media platforms are also relevant marketing channels, sometimes replacing entirely traditional choices like TV commercials or flyers. Every second, 3.3 million new posts appear on Facebook and almost half a million on Twitter. What if you wanted to keep track of all those times your brand was mentioned?

To leverage the power of the social media, create a marketing plan and allocate budgets accordingly. Brands want to have clear insights about the impact of their actions, the client's preferences and even negative reviews. Yet, given the volume of information, it is impossible to do so manually.

Overcoming the information overload

Enter machine learning (ML), a series of algorithms that enable computers to identify patterns in data and classify it in clusters. This is perfectly adapted to unstructured data as social media postings don't follow any rules. It is usually a mix of text, images, sounds, and video.

The results of such an analysis can give actionable insights about the selected users. Natural language processing offers valuable clues about the age, gender, location, and preferences of the authors of posts on social media. The data



coming from an NLP API can help with customer segmentation based on real-world data instead of statistics or educated guesses.

Why use machine learning

There are several reasons to deploy ML in social media analysis which are dictated by the 3 Vs. of Big Data (volume, velocity, and variety).

Scalable

The sheer volume of social media activity requires automated tools to deal with the processing activities. It is impossible, even with a dedicated social media team, to keep track of all channels and brand mentions. Instead, web scraping tools gather all the posts that may be associated with the brand, put them in a data lake from which they are fed into the algorithms that slice and dice them into relevant pieces.

Text vs. context

The scraping phase relies on a keyword such as the brand or product name. For dedicated campaigns, the search could be done using a hashtag, but this is just the beginning. With Big Data we can achieve more than with simple statistical tools designed for structured data. Those would have just counted how many times the keyword appeared in conversations and added more filtering levels like geolocation and gender, while now we can create graphs that show the existing links and give meaning. It is more important to analyze not only the focus word (the text) but also the context it is placed in. Through sentiment analysis powered by NLP, a company can learn how happy the clients are with the product and what are the words associated with both positive and negative feelings. This is similar to the way humans understand each other from the tone of their voice or how friends communicate through instant messaging.

Relevance & authority

In social media, it is important to identify influencers — whether they are individuals or agencies — since these are central nodes in the network and creating a partnership with them can create viral content which boosts marketing.

A piece by Stanford explains how it is possible to trace back the links and see where each bit of information comes from and even track changes to initial posts using graphs. The most relevant items have many references, while the content generators with the highest authority create relevant posts consistently.

Speak their language

Just ten years ago, marketing research was done through surveys and focus groups. Machine learning not only improves the accuracy, speed and reliability of the answers, but it can combine different sets of pre-existing information to answer new questions. This can help narrow down options or create a new action course after initial testing, thus iteratively reaching a decision.

By looking at social media insights, marketers can learn about new ways that clients are using the product, how they feel when they purchase it and even new business opportunities.

Previous client segmentation techniques could not create user personas, but right now through clustering, a company can find out not only that their typical customer is in her early twenties, college educated and an ecologist, but they can also generate posts that sound like her own, reaching a very personal level of targeted marketing.

Speaking of language, since machine learning algorithms just use clusters, they can be used to analyze different languages without modifying the underlying commands. Also, these tools are great for social media analysis, an environment where users sometimes mix more than one language, especially in the case of non-native English speakers. For example, text can be written in the user's mother tongue, have emoticons which are universal and trendy hashtags in English, creating a richer message that connects with global users.

Computers don't understand

It is important to understand that computers don't process information the same way humans do, although this is the ultimate goal of AI. Currently, they just create rules and apply them, giving the impression of reasoning. Yet, this is not an argument against using machine learning, just a reminder of a program's capabilities and a way to set realistic expectations.

The possible drawback of this limitation is that analyzing social media posts calls for particular attention during the calibration phase, especially regarding meta communication such as emoticons and using irony and sarcasm. While a human can detect this more easily, a machine could classify such a post in the wrong bin and ignore a dissatisfied client.

From user to influencer

Before social media, the number of people who could influence others was limited and usually consisted of high-profile and highly-visible individuals like movie stars, athletes, doctors or experts. Content creation was also limited to publishing houses and media channels. Through smartphone democratization, each of us is a content creator and the entry barrier to becoming an influencer has been lowered, thus allowing anyone to create accounts and posting their

thoughts. In this de-regulated environment, companies no longer control their image. Right now, they can only watch the show and determine the behaviors that result in positive market stimulation to encourage them.

Finding the Value in Your Social Media Investment

Facebook, Twitter, and LinkedIn each include access to the analytical data connected to your account. For Facebook and LinkedIn, this information is tied to business pages your company has published, rather than data about an individual's personal profile. Twitter makes analytics available for both personal and business accounts. Google Analytics can track activity that reaches your website. You can visit the analytics page for each social media platform, but to save time, you probably want use a tool that can consolidate this information for you into a dashboard arrangement.

There are a number of services to which you can connect your social media accounts that will then aggregate your activity, and let you see the consolidated analytics information in one or more screens. Some services will even email you pre-formatted reports based on the data that you can share via email with others in your organisation. And other tools will allow more than one person to work in the social media tool account, so that you can divide and conquer. However, simply watching the data go by is insufficient, you need to set goals so that you can track progress.



Setting Goals for Your Social Media Interactions

What is the goal of your social media interaction? Your reasons should extend past the “me too” participation where you’re only sending tweets and posting on Facebook because you think you should. Rather, it’s important to set goals for your social media activity, and selecting key performance indicators (KPIs) can help you achieve the results you want. Here are some things to consider:

- **Audience Size and Profile:** To be successful you must continuously build your audience and it needs to be the right one. Defining and targeting the right people shapes the kind of content you post, how frequently you post it and how to assess and understand trends.
- **Content Assessments:** On a regular basis, it's a good idea to analyze your posts to see what is working and what is not. Do you have the right mix of content? Does your content truly align with your audience profile? Do videos, images or text updates engage most?
- **Extent of Reach and Engagement:** Monitoring and assessing both can give strong insight into who are the most and least active in your audience, and what kinds of content engages them most.
- **Traffic Back to Your Website:** Measuring the amount of traffic back to your site from content you post and how people engage, plus how many people engage is important information.
- **Responsiveness (Your Own):** The speed and manner in which you respond to and interact with customers online are important because they are in essence a live and public record of your level of customer service.
- **Responsiveness (Your Customers):** You can also measure customer response rates to specific questions or posts. Spark a conversation that encourages readers to comment back to you on a statement you make in a post, or redistribute your statement to others. Note their views, preferences, and issues, and adjust your marketing accordingly.
- **Monitor Audience Sentiment:** This is the act of assessing positive, negative and neutral mentions of your product or service to gain greater insight into how it is being used, viewed and talked about.
- **Correlate Social Data with Additional Relevant Data:** For instance, if your product offers an update, assessing number of updates against social media posts (positive, negative and neutral)— consider gathering data from both public and business sources. public sources as well as business data.
- **Make social media part of your business processes,** starting with the customer service organization. Train employees involved on the program to interpret data and how to react on crisis.

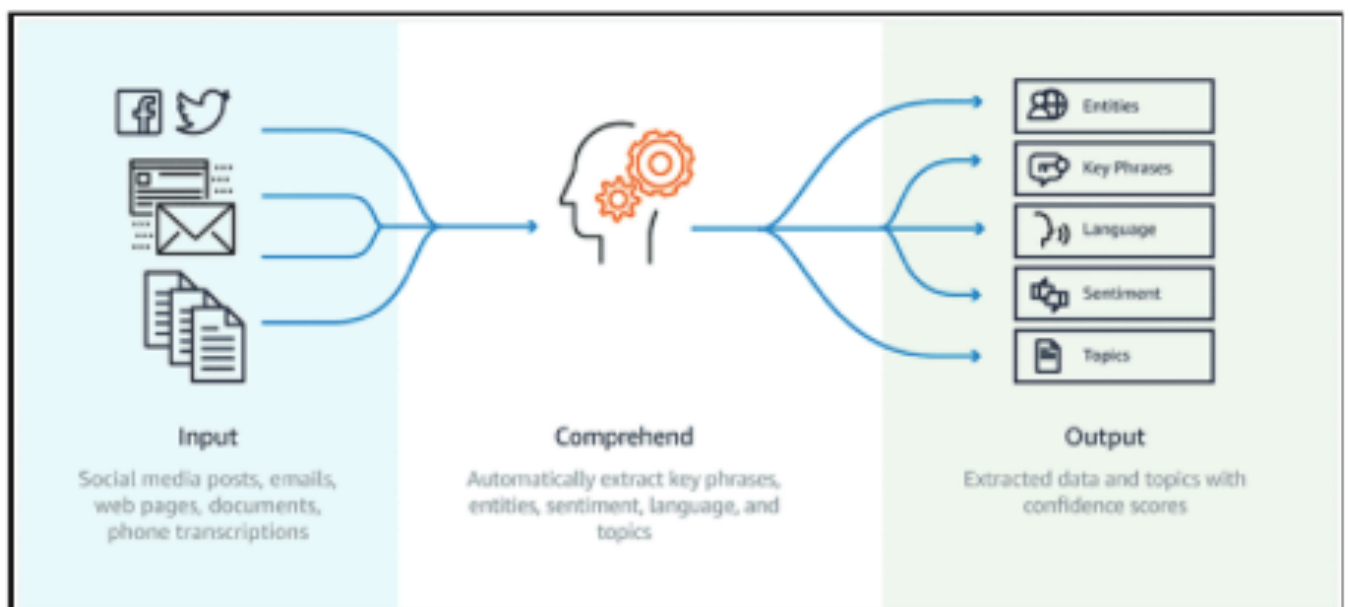
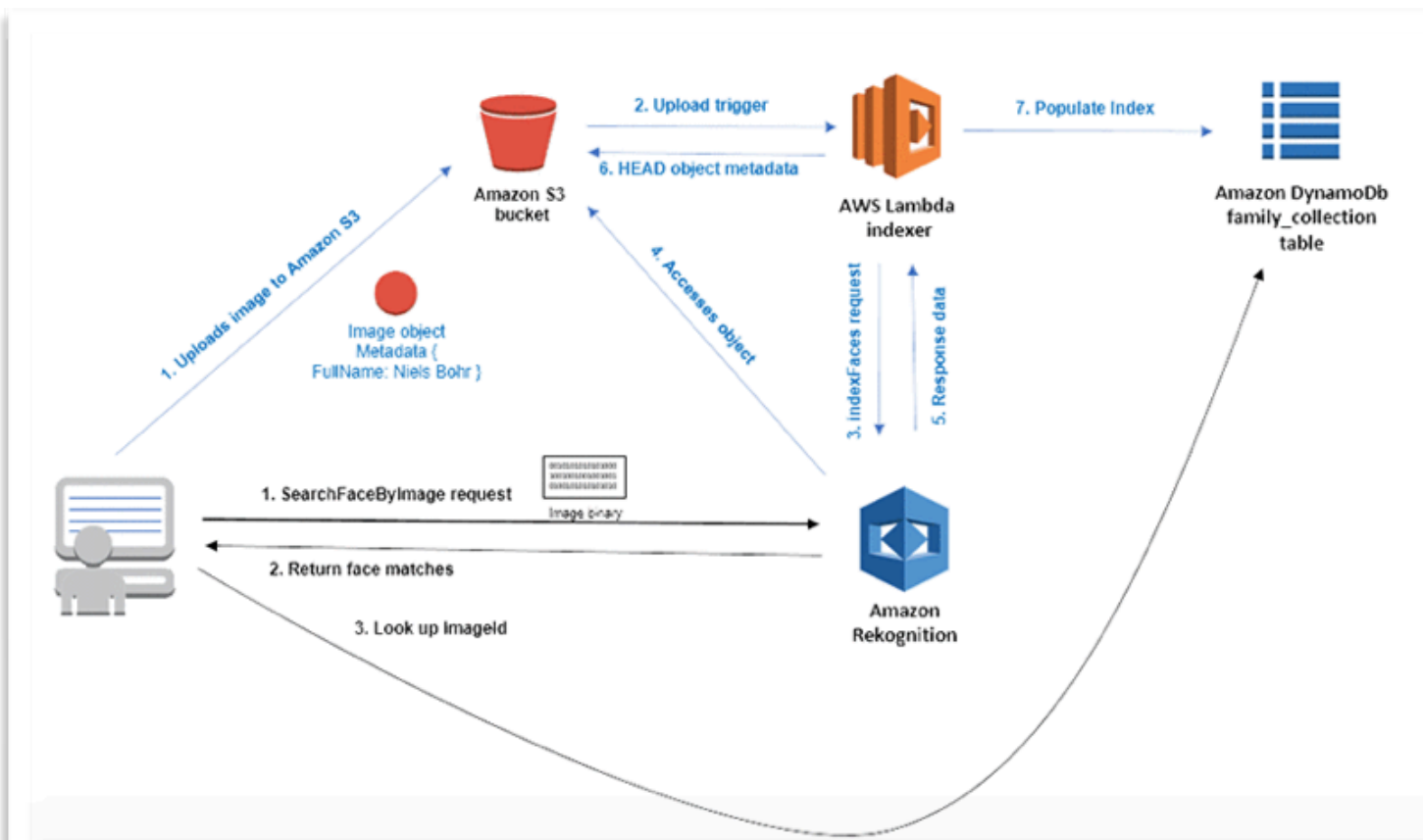
Along with the time invested in performing the activities themselves, you need to assign a dollar value to each activity based on a Customer Lifetime Value. Here are some examples of those factors from a report by Umbel1 on assigning values to social media activities:

- **Customer Acquisition Cost.** What does it cost your company to acquire just one new customer?
- **Customer Retention Rate.** Do customers acquired from different channels use the services for longer?
- **Discount Rate.** Test different discounts and trials on different channels, to identify the ideal discount rate?

Taken together, the Umbel report¹ produces a calculation of the Customer Lifetime Value. You can then use to assign dollar values to the activities that lead to both brand awareness and revenue generation.

There are several such methods for calculating the value of social media activity, and there are tools that will calculate those values for you if you supply the information. You may find it to be faster and more accurate to use a tool rather than calculating the values manually. Integrating social data from all social media channels is an enormous task. Gradually, make your headway into a central data analysis platform.

Code to Pull data from AWS Cloud server



In Athena, run the following commands to create the Athena database and tables:

```
create database socialanalyticsblog;
```

```
CREATE EXTERNAL TABLE socialanalyticsblog.tweets (  
    coordinates STRUCT<  
        type: STRING,  
        coordinates: ARRAY<  
            DOUBLE  
        >  
    >,  
    retweeted BOOLEAN,  
    source STRING,  
    entities STRUCT<  
        hashtags: ARRAY<  
            STRUCT<  
                text: STRING,  
                indices: ARRAY<  
                    BIGINT  
                >  
            >  
        >  
    >,  
    urls: ARRAY<  
        STRUCT<  
            url: STRING,  
            expanded_url: STRING,  
            display_url: STRING,  
            indices: ARRAY<  
                BIGINT  
            >  
        >  
    >  
    >,  
    reply_count BIGINT,  
    favorite_count BIGINT,  
    geo STRUCT<  
        type: STRING,  
        coordinates: ARRAY<  
            DOUBLE  
        >  
    >,  
>,  
>
```

```
id_str STRING,
timestamp_ms BIGINT,
truncated BOOLEAN,
text STRING,
retweet_count BIGINT,
id BIGINT,
possibly_sensitive BOOLEAN,
filter_level STRING,
created_at STRING,
place STRUCT<
  id: STRING,
  url: STRING,
  place_type: STRING,
  name: STRING,
  full_name: STRING,
  country_code: STRING,
  country: STRING,
  bounding_box: STRUCT<
    type: STRING,
    coordinates: ARRAY<
      ARRAY<
        ARRAY<
          FLOAT
        >
      >
    >
  >
>,
favorited BOOLEAN,
lang STRING,
in_reply_to_screen_name STRING,
is_quote_status BOOLEAN,
in_reply_to_user_id_str STRING,
user STRUCT<
  id: BIGINT,
  id_str: STRING,
  name: STRING,
  screen_name: STRING,
  location: STRING,
  url: STRING,
  description: STRING,
  translator_type: STRING,
  protected: BOOLEAN,
  verified: BOOLEAN,
  followers_count: BIGINT,
```



```
friends_count: BIGINT,  
listed_count: BIGINT,  
favourites_count: BIGINT,  
statuses_count: BIGINT,  
created_at: STRING,  
utc_offset: BIGINT,  
time_zone: STRING,  
geo_enabled: BOOLEAN,  
lang: STRING,  
contributors_enabled: BOOLEAN,  
is_translator: BOOLEAN,  
profile_background_color: STRING,  
profile_background_image_url: STRING,  
profile_background_image_url_https: STRING,  
profile_background_tile: BOOLEAN,  
profile_link_color: STRING,  
profile_sidebar_border_color: STRING,  
profile_sidebar_fill_color: STRING,  
profile_text_color: STRING,  
profile_use_background_image: BOOLEAN,  
profile_image_url: STRING,  
profile_image_url_https: STRING,  
profile_banner_url: STRING,  
default_profile: BOOLEAN,  
default_profile_image: BOOLEAN  
>,  
quote_count BIGINT  
) ROW FORMAT SERDE 'org.openx.data.jsonserde.JsonSerDe'  
LOCATION '<TwitterRawLocation>';
```

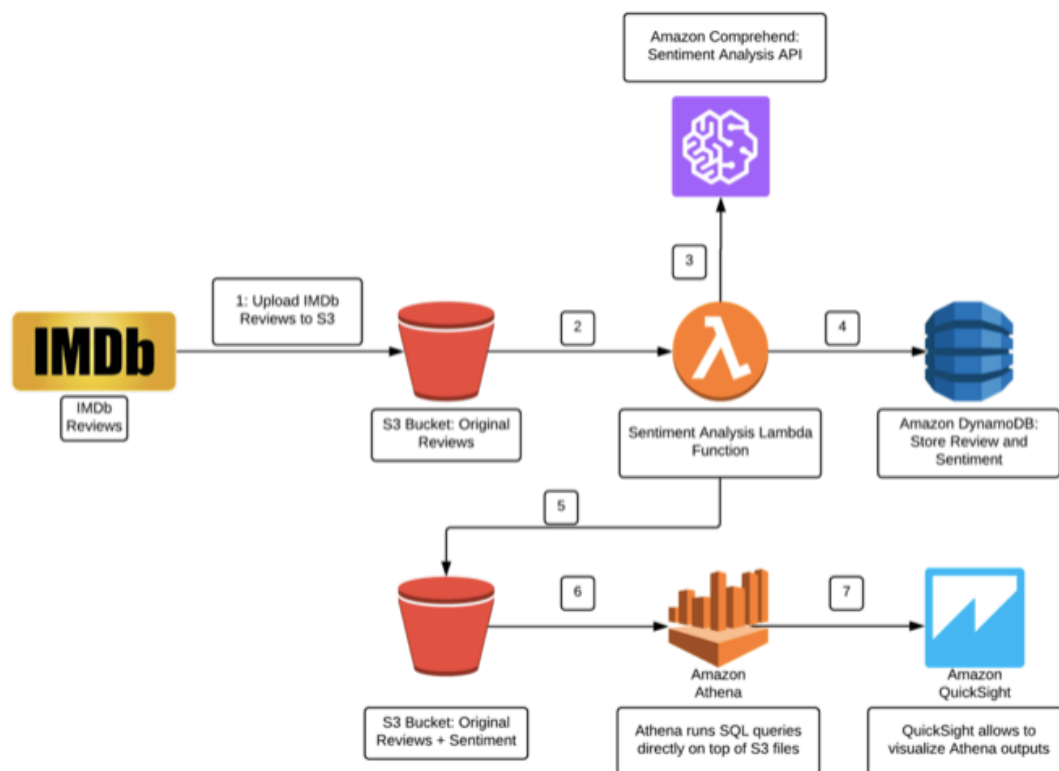
This will create a tweets table. Next we'll do the same and create the entities and sentiment tables. It is important to update both of these with the actual paths listed in your CloudFormation output.

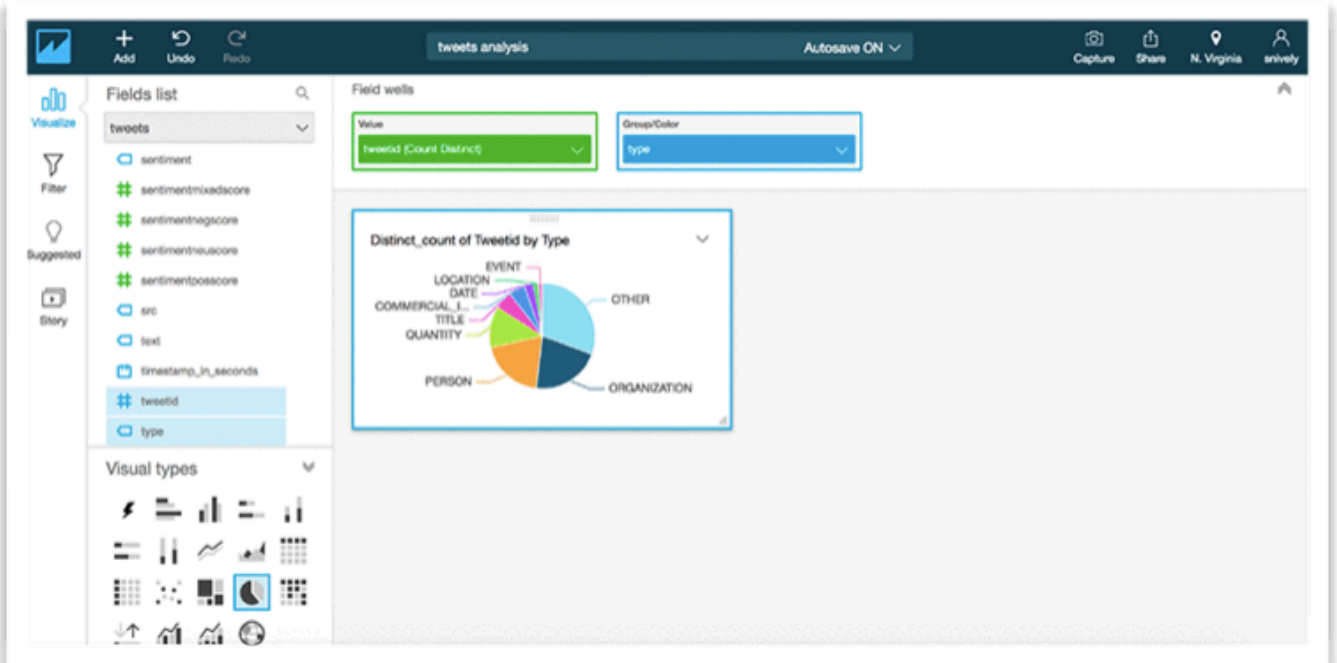
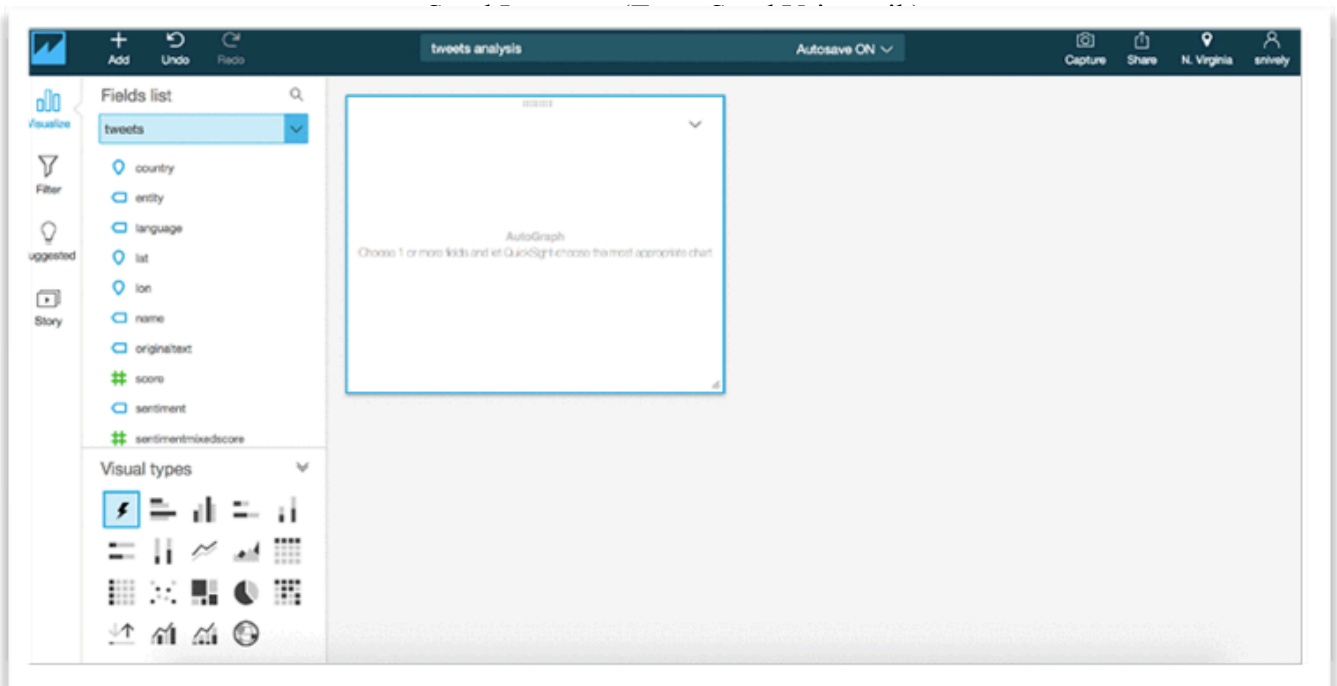
First run this command replacing the path highlighted in the following example to create the entities table:

```
CREATE EXTERNAL TABLE socialanalyticsblog.tweet_entities  
(  
    tweetid BIGINT,  
    entity STRING,  
    type STRING,  
    score DOUBLE  
) ROW FORMAT SERDE 'org.openx.data.jsonserde.JsonSerDe'  
LOCATION '<TwitterEntitiesLocation>';
```

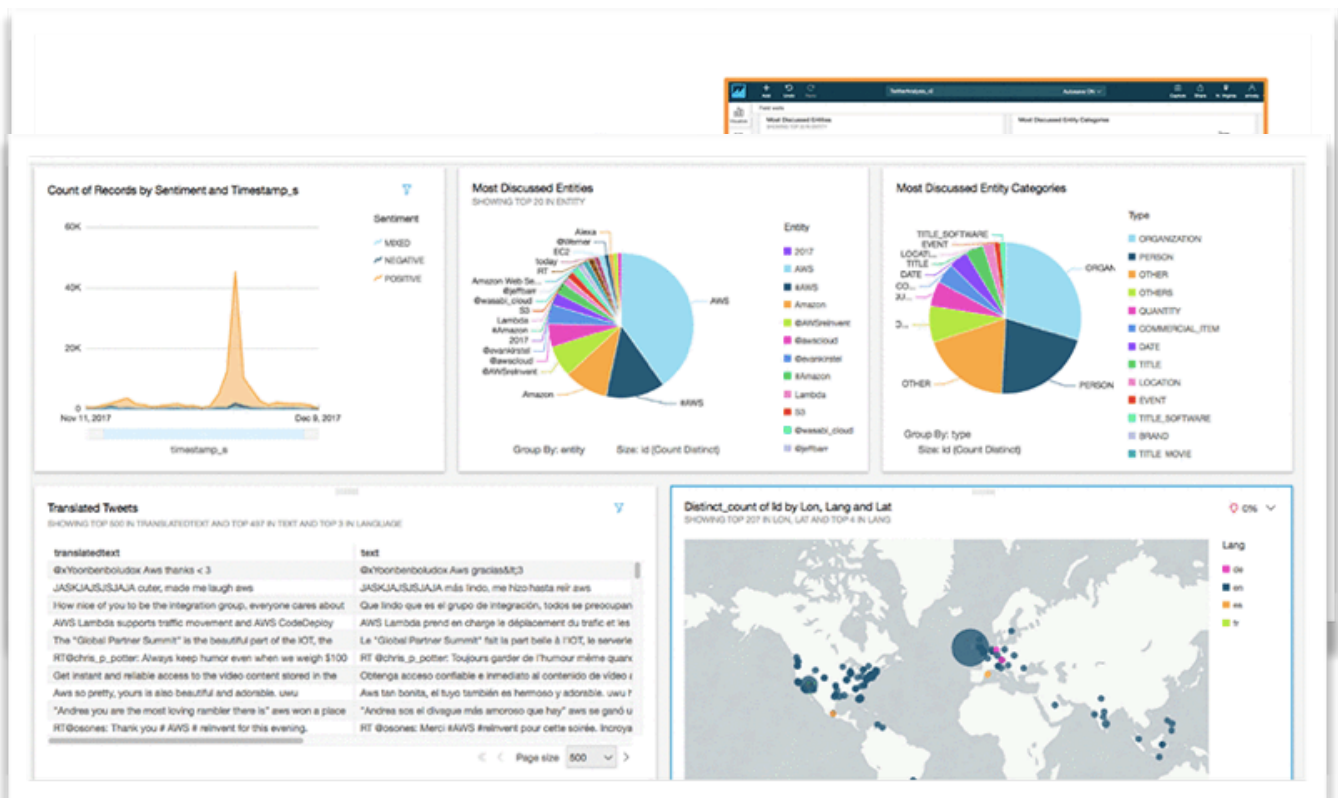
And now run this command to create the sentiments table:

```
CREATE EXTERNAL TABLE
socialanalyticsblog.tweet_sentiments (
  tweetid BIGINT,
  text STRING,
  originalText STRING,
  sentiment STRING,
  sentimentPosScore DOUBLE,
  sentimentNegScore DOUBLE,
  sentimentNeuScore DOUBLE,
  sentimentMixedScore DOUBLE
) ROW FORMAT SERDE 'org.openx.data.jsonserde.JsonSerDe'
LOCATION '<TwitterSentimentLocation>'
```





Now



socialanalyticsblog

TABLES Create Table

Filter Tables...

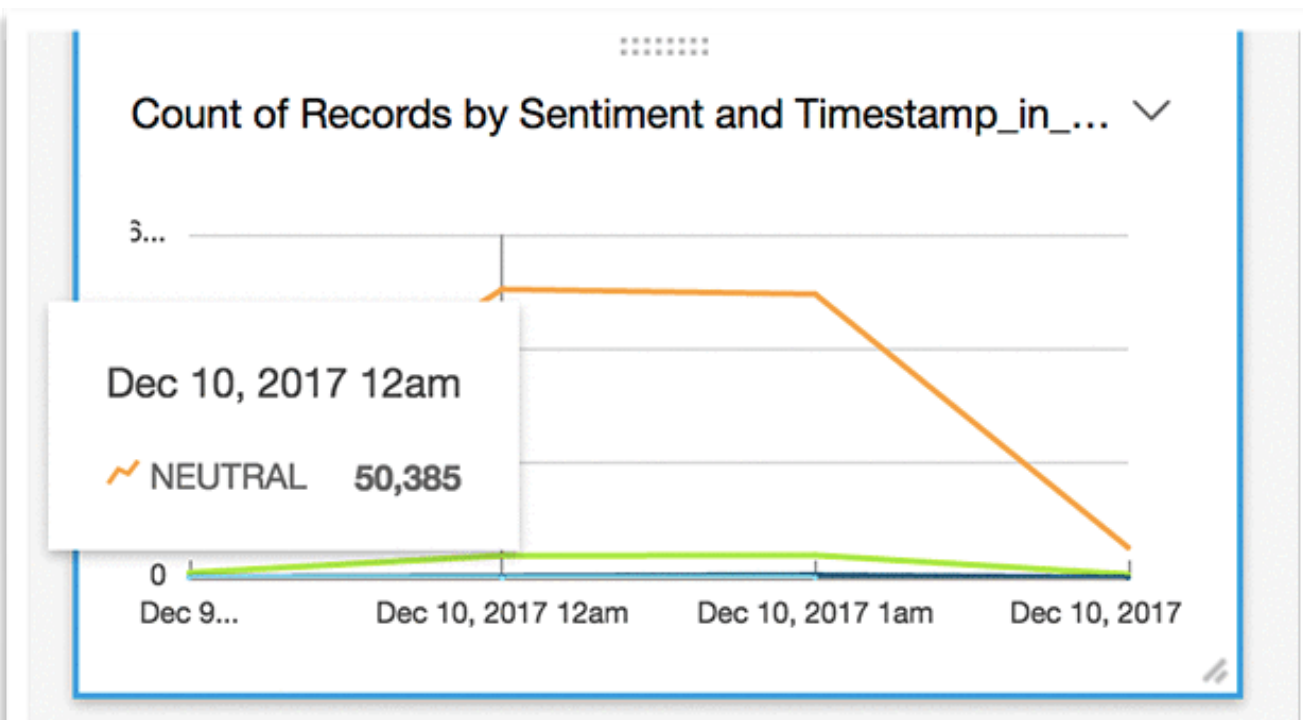
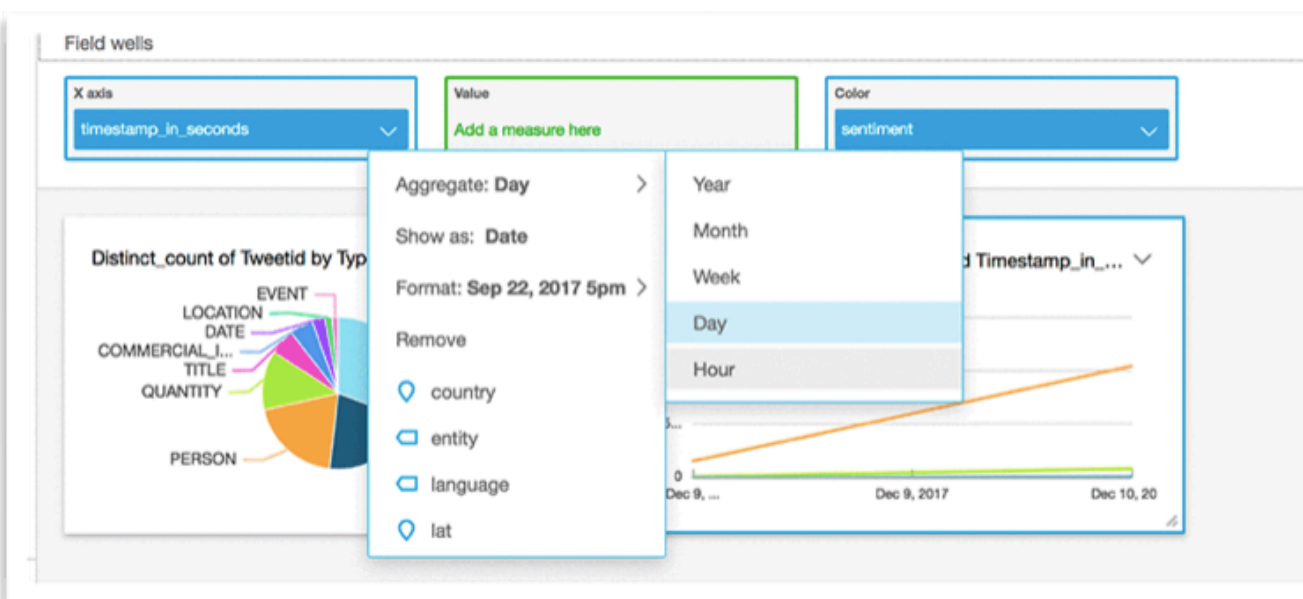
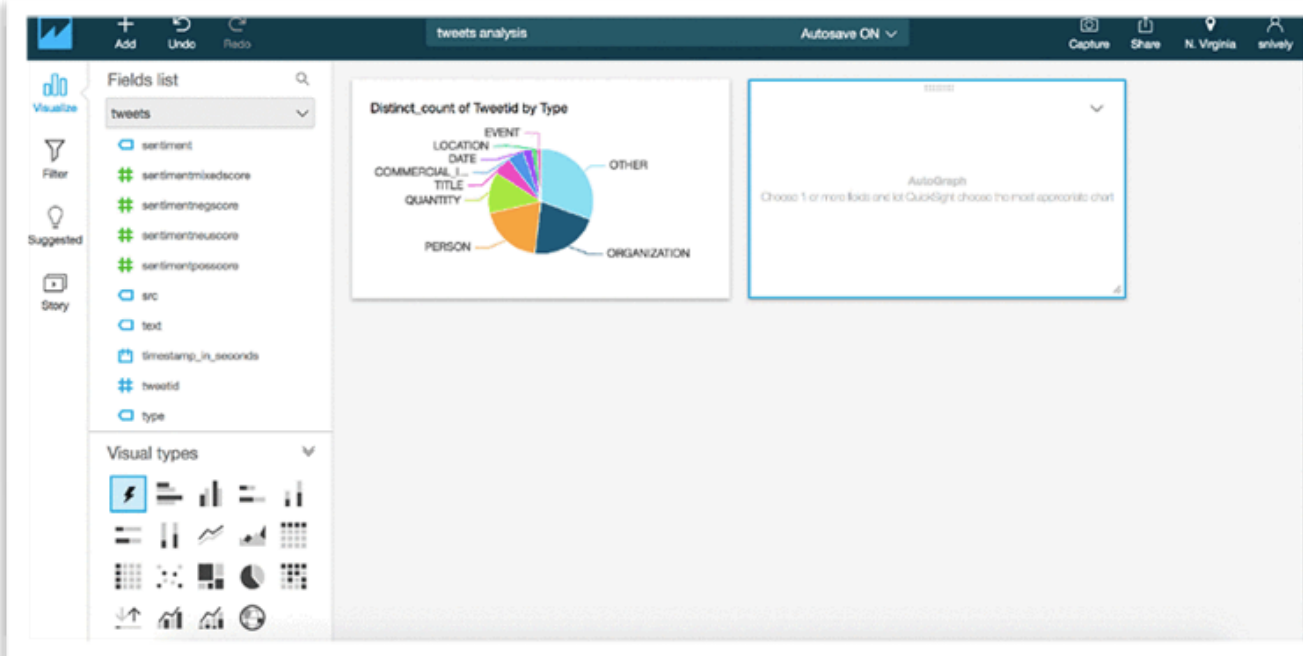
tweet_entities

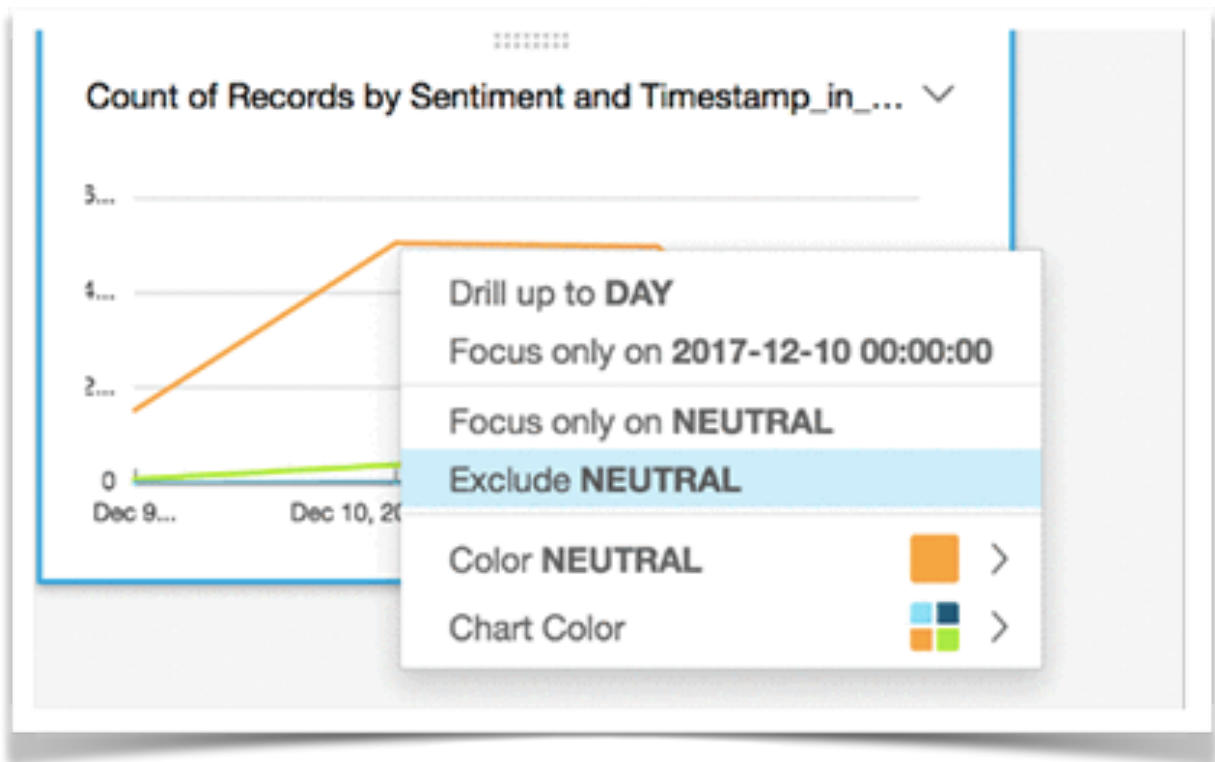
tweet_sentiments

tweets

Results

coordinates	retweeted	source	entities
1	false	Amazon	{hashtags=[{text=giveaway, indices=[126, 135]}], urls=[{url=https://t.co/FCYU5uOpt
2	false	Amazon	{hashtags=[{text=giveaway, indices=[125, 134]}], urls=[{url=https://t.co/VlWdmUZ4j
3	false	Amazon	{hashtags=[{text=giveaway, indices=[131, 140]}], urls=[{url=https://t.co/060zva0xN3
4	false	Twitter for Android	{hashtags=[], urls=[]}
5	false	Amazon	{hashtags=[{text=giveaway, indices=[96, 105]}, {text=giveaway, indices=[130, 139]}]
6	false	Twitter for iPhone	{hashtags=[], urls=[]}





How Synd Vivran App Looks Like:-



The flow of the Synd Vivran App is explained in the PPT attached along with the file

Flow of Tech Idea in Synd Vivran-

Synd Vivran (an APP named by our team) provides the detail profiling of the customers along with the indulgence of all the factors based on which what potential the customer profile has and for which products.

Now it can be explained with an example:-

Suppose a customer is having a twitter,facebook,instagram,Google+, snapchat, Spotify and other accounts. Now with the leverage of the data and in association with the data providing companies will do the customer social profiling.

Suppose a customer is using twitter handle and it is following financial markets, any online shopping site, any specific shopping malls offers, any Games(online) platform our Synd Vivran app asks for customer social profiles addressing,also we can have the insight from the details customer gives the forms.

This is only a way the other side is our app leverages the data with Digital Data providing companies with a MoU.

The third way is for the people who are following our own “SYNDICATE BANK” social platforms wither any video posted on youtube, Facebook page, twitter or any BIG-BAZAR sale or any.

Now with the help of data sourced as such the data and the app we are making for business development and self learning kind of APP I.e ARTIFICIAL INTELLIGENCE touch the data sourced would be in the cloud(AWS server for us) where we would retain it for a long term.

The data lake Syndicate Bank had created would be tunnelled with the help of AZURE MACHINE LANGUAGE. The parameters input is required from the Users end would be using the Synd Vivran app.

Now the Data modelling comes in the phase:-

The tunnelled data provided by Azure Machine Language(would be referred as Azure ML from now on) would be then guided to an analytics zone where specific parameters of the Data would be analysed viz. suppose a customer has used Syndicate Bank Debit card on BIG Bazar will make

use of that the amount of transaction that the kind of Credit card it can use and would be beneficial based on the transaction requirements

Example 2- The customer social profiling and access will develop and calculate the GDPR the banks were allowed *leverage* to process the necessary data in order to assess the risk of granting a loan to a particular business or a person. With the advent of new powerful data processing tools such as deep learning algorithms, AI the digital finance industry came to a point where the knowledge about the customer can be one of the main advantages in a run for a client.

The GDPR put tight conditions on the so-called automated decision making (further as “*ADM*”), regardless of the industry in which it takes place. The ADM would be allowed in two scenarios: through consent given by a customer or if the ADM is explicitly allowed by the national laws. In the second scenario, the requirement towards such national laws would be that national legislation should ensure suitable measures to safeguard data subjects’ rights and freedoms. As we all know, getting a customer’s consent for the personal data processing in any process is quite a difficult task.

But, the suitable measures to safeguard a data subject’s rights were introduced by giving them the right to obtain information about the grounds of the decision, the right to human intervention when re-making the decision as well as the right to express its own opinion. At the final stage of the legislative procedure, it was decided that a data subject will not have the right to challenge the decision based on the automated processing, as it was proposed previously.

Example 3- Now if a Customer is actively looking for a job in LinkedIn or a customer having a potential profile score would help in accessing what would the credit requirements of the customer.

Now if a customer is an entrepreneur the Score of his profiling could be best suited and measured and the potential of the customers would be helpful in many cases like that of Credit requirements, Salary accounts for its employees, financing options, investment opportunities.

The use of R- Analytics portion helps to guide and access the potential of the customer and also on the basis of its current access and activities what would be the probable future requirements of the customer and at what time.

For this R- analytics would be quite helpful as such it guide us to access the future requirements or in other words can be iterated as future prediction of the requirements of the customer.

Now being a banker who likes to get accessed with the data of the customer in easily understandable format as such the raw data being provided wouldn't be useful for any banker as it would be hardly difficult for any banker to analyse the potential customer and also putting its effort to convert the potential customer into actual customer by making them to pass through the Sales Funnel completely

To Ease this process will integrate the last phase of data and inject it into Microsoft PowerBi/Tableau zone. It helps us to get the data in easily understandable form in the form of charts and graphs and filters which would help to slice and dice the parameters as per the requirements and targets of the company's campaign and offers.

Example 1- Using Sankey charts to identify the customers for a Gold Loan and the amount for which the customer might would be looking for a Gold loan

Example 2- Using Pareto-Sankey Mix charts to identify the customers profile strength to be eligible for the amount of credit sanctioned for the customer and how much strength the customer profile has and how much could be extended to it based on an AI Backend learning process.

Example 3- Using a Geographical model to analyse the requirement of the customer in any area where a new society is developing and any builder whom any customer is following and the kind of office ar personal space it is looking based on the factor of what it's social profile has and what all requirements he must be looking at.

It inevitably helps the Corporate office to Have an Eagle-Eye view of the entire business across the Globe with a vantaging view of the new business of syndicate Bank to follow up unscrupulously.

It helps both the backend and frontend team to coordinate each other and inevitably the customer would be passed through the sales funnel.

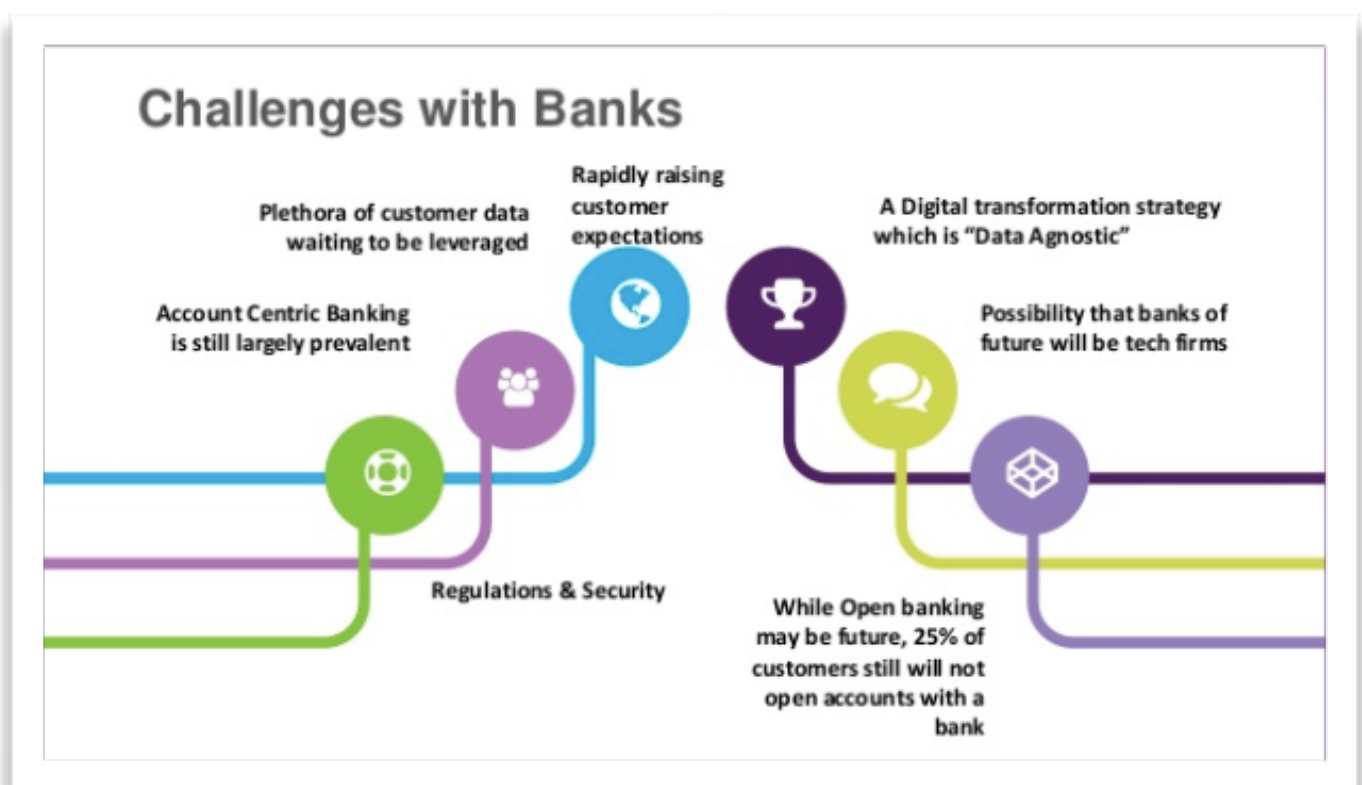
All the approach at the backend would be knitted with Tensorflow(Artificial Intelligence) approach so that the system would be self-guiding and self-learning and the next time the customer profile would be accessed the app would only guide the concerned banker with the fact that what were the earlier requirements, it turned out to be success or not and based on it why the customer had negated and what best features and products now can be offered to the customer.

1.5- Pictographic representation and Dearth King concept Introduction

Pictographic Bolstering to the concept and Tinge to a new coined term (Dearth King Race)-

Dearth King race is new term coined for the fact that nowadays Banking sector has taken a drastic leap. Every bank is trying to take competitive advantage over other. In order to take competitive advantage banking sector runs the risk of running faster in the same place(If not supported by Right Strategy)

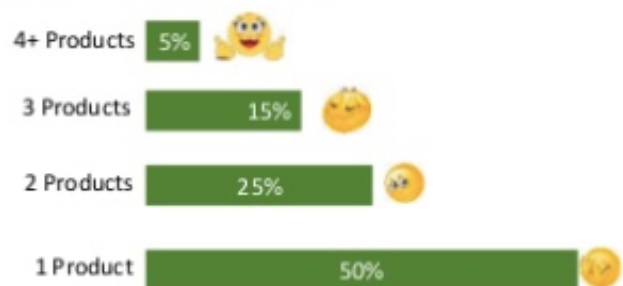
In order to overcome this and make Syndicate Bank a global Leader



Why do customers leave you?

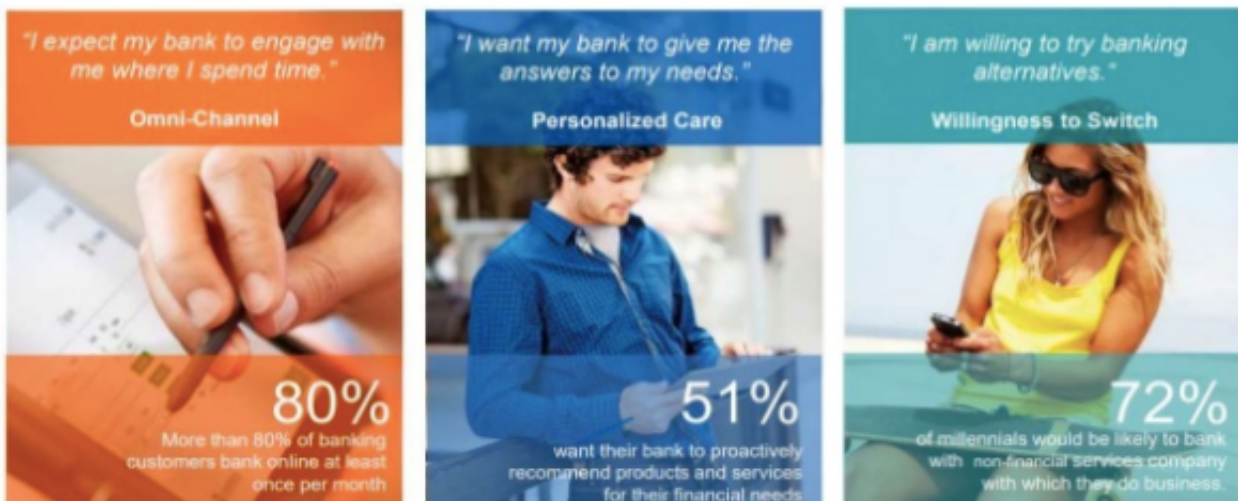
-  1% a natural death
-  8% develop other relationships through references
-  9% leave for competitive reasons
-  14% are not happy with products
-  28% leave because of no personalized promotions
-  40% leave because of poor service / no emotional connect

Cross Sell Drives Customer Retention

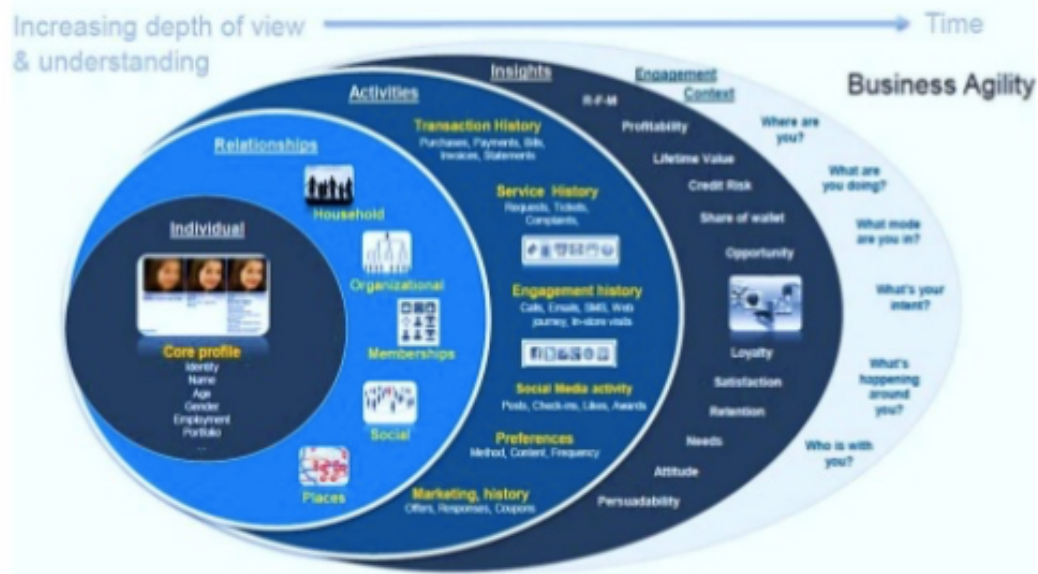


Risk of Leaving you in 12 months

Changing customer behavior is influencing banking changes



A “Customer Centric Banking Platform”



Customer Data Landscape





Good News!

Customers will share their data to advance innovation

AI applications in a “Customer Centric” Bank

Customer Relationship

- Client Centricity
- Customer Onboarding
- Customer Segmentation
- Customer 360
- Conversational AI
- Next Best Action

Fraud

- Loan Fraud
- Payment Default
- Identity theft

Risk and Compliance

- Credit Risk
- Market Risk
- Liquidity
- Business
- Reputation
- Data

Information Security

- Detecting Online Intrusions
- Data leaks



1.6- Closure of the Prototype Ideation

The Idea which the team Synd Vaigyanik is prefacing will definitely make Syndicate Bank a Global Leader and that's a commitment of The Team Synd Vaigyanik

Author- Team Synd Vaigyanik
Version- Synd Vivran 2.0