Healthcare Data Assets & Strategy

Week#8

Instructure:

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PROBLEM DESCRIPTION

Organization top management is concerned about "ABC Pharmacy" future prospects, recruits new CDO and shared below

a) Due to covid-19 ABC pharmacy profits are in turbulence

b) Some stores are profitable, others underperforming, many missing opportunities (No stores where we should have opened)

c) Initial assessment shows due to covid - some of the changes in work culture (work from home), changes in real estate/rental pricing, resulted in people getting migrated to different locations, as a result changed population density impacting overall sales

d) People started moving from one place to another but we are unable to track these dynamic changes

e) Existing IT solution is unable to provide answers, organization is not able to make necessary right decisions in time to adapt to changes

OBJECTIVES

Build the capability to understand consumer migration at the store level and build the levers to maximize store profitability in the face of demographic shifts
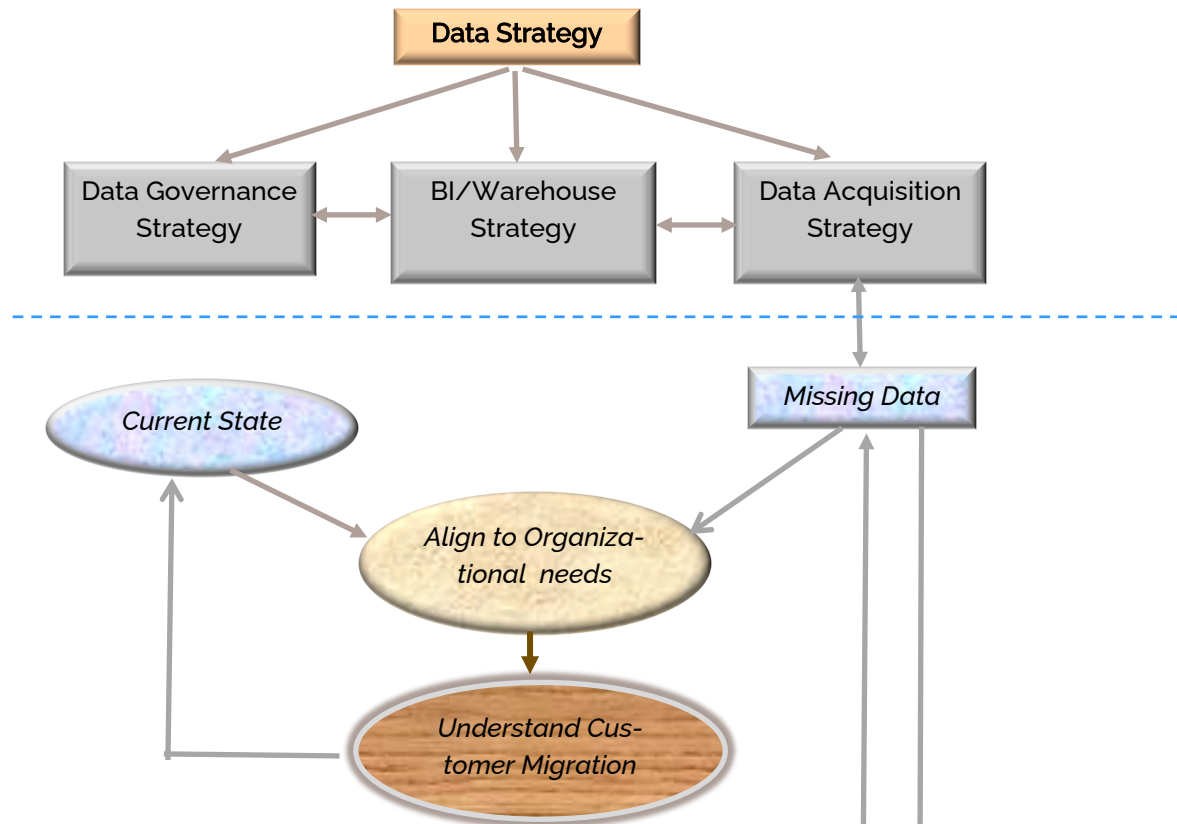
STRATEGY

Analysis - Current State Of Organization:

First, I will go through existing business models, Entire enterprise architecture, Business units, sources, check if any SILOS, Issues that they are facing, security setup, what kind of data, (structured/semi/unstructured), how frequently data is collected, data quality, ELT/ETL's reporting, KPI's,...etc gather all such information to get over all picture of current organizational setup and processes
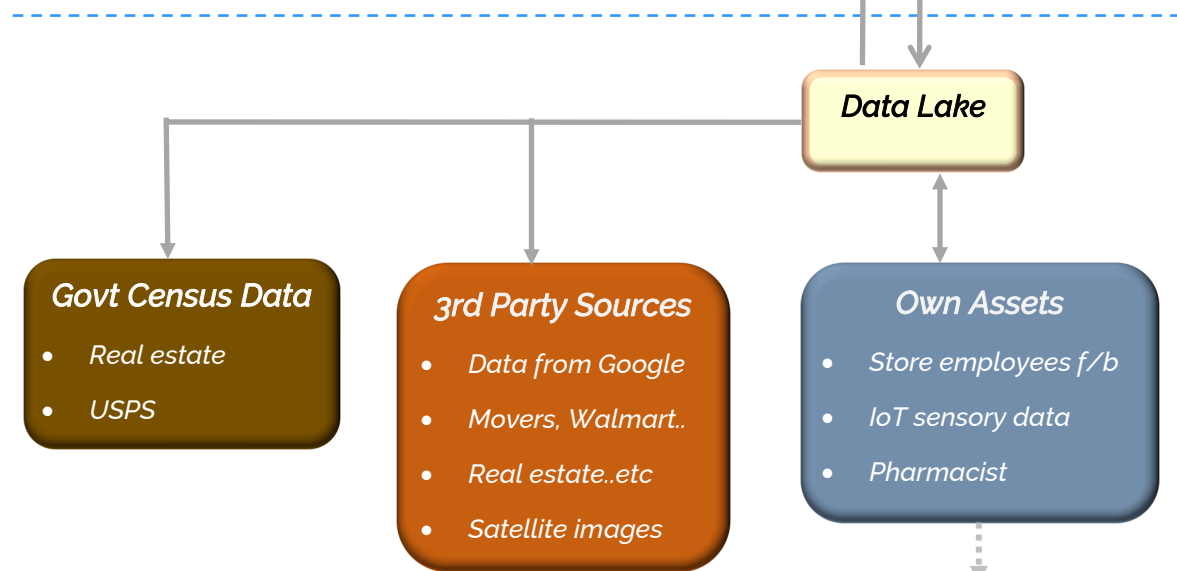
Data Focused Approach :

1) Organization needs are analyzed, Document gap between current and organizational needs

2) Will go for top down approach and design data driven architecture, where all data needed (current and future needs)for organization to mine and extract information as part of data acquisition strategy

3) Next page shows how to align to organizational needs (made some assumptions about organization, focused on specific to problem description as per requirements, Governance, Quality, Data stewardship..etc taken care by existing setup)

Data Strategy

The diagram shows:

Data Strategy branching to:
- Data Governance Strategy
- BI/Warehouse Strategy
- Data Acquisition Strategy

Current State → **Align to Organizational needs** → **Understand Customer Migration**

Missing Data

Tactical Level

Data Lake connecting to:

Govt Census Data
- Real estate
- USPS

3rd Party Sources
- Data from Google
- Movers, Walmart..
- Real estate..etc
- Satellite images

Own Assets
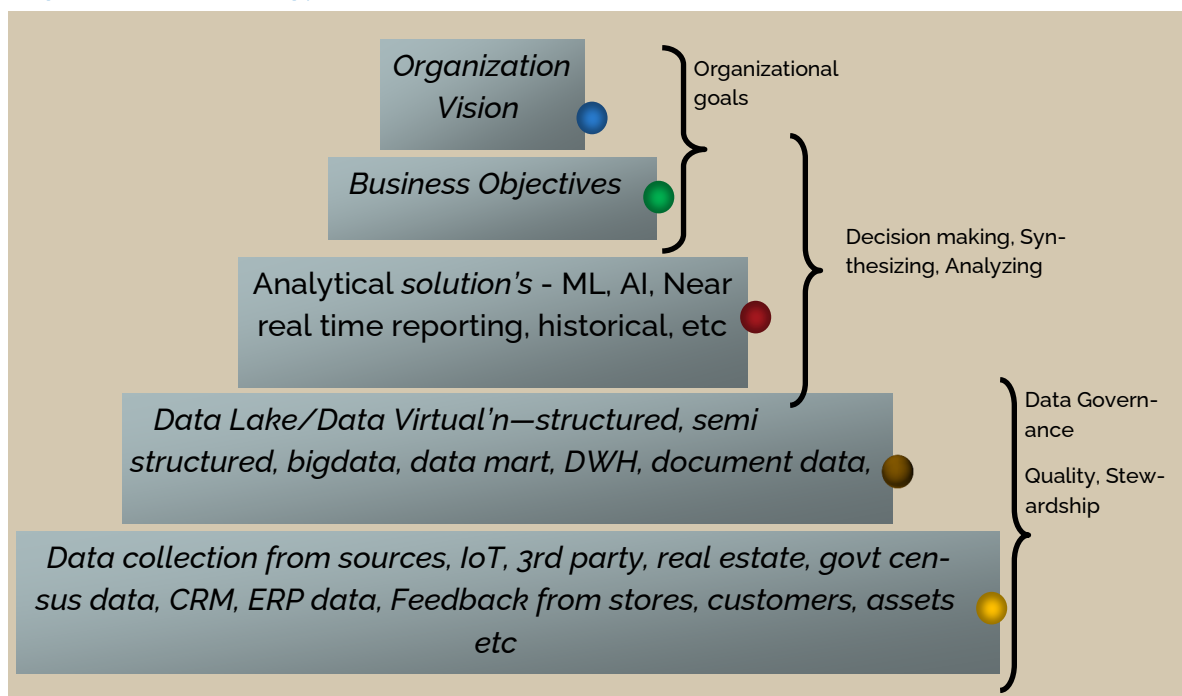- Store employees f/b
- IoT sensory data
- Pharmacist

Take feedback from pharmacist/store employees related to people migration in their neighborhood

Guidelines to new recruits—part of our strategy:

*New recruits must be local to store location and good aware of surroundings

*Relocate existing assets to their locality with assistance those who are willing to move
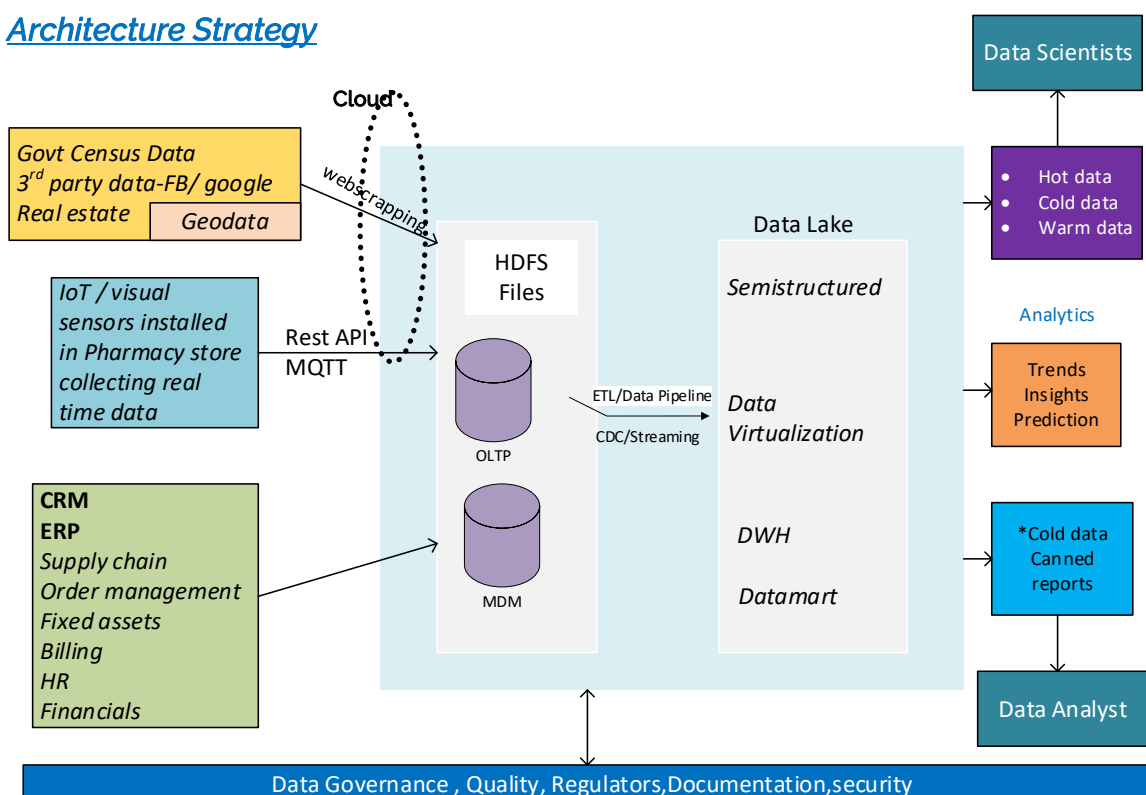
Organization strategy

Organization
Vision

Organizational
goals

Business Objectives

Decision making, Syn-
thesizing, Analyzing

Analytical *solution's* - ML, AI, Near
real time reporting, historical, etc

Data Lake/Data Virtual'n—structured, semi
structured, bigdata, data mart, DWH, document data,

Data Govern-
ance

Quality, Stew-
ardship

Data collection from sources, IoT, 3rd party, real estate, govt cen-
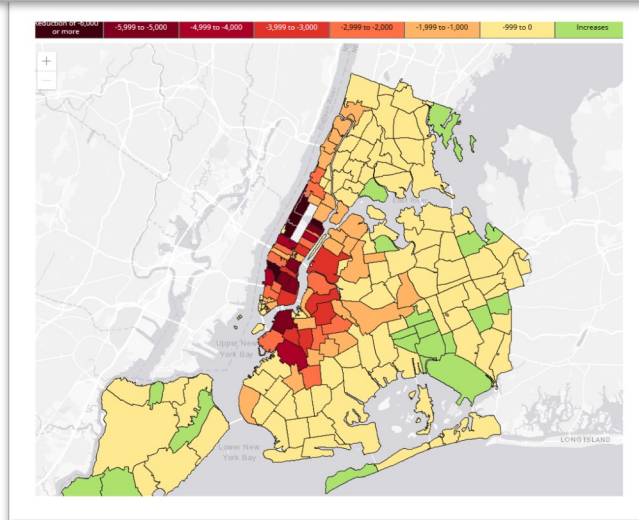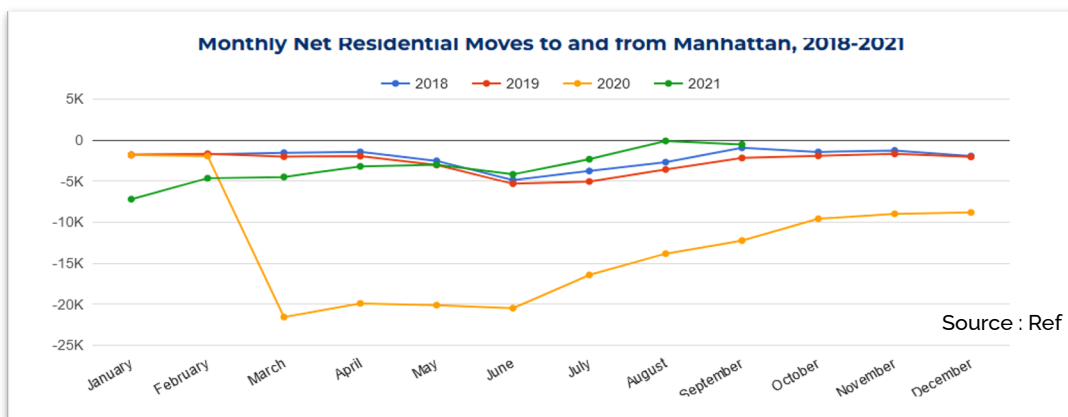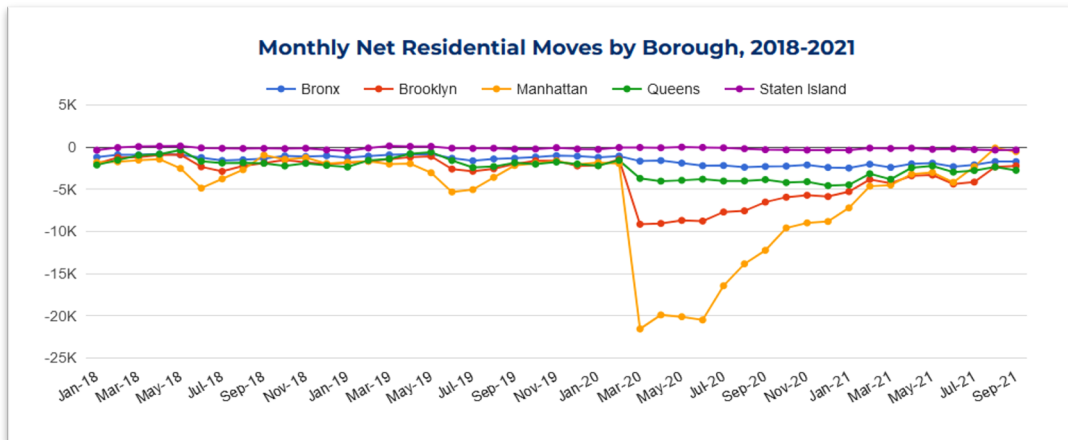sus data, CRM, ERP data, Feedback from stores, customers, assets
etc

Demography data-->information—>insights, trends

Based on the knowledge gained from insights (i.e demography change happened say for a specific county), SME's take necessary decisions in scaling up/down ABC Pharmacy operations ,Strategy give us more flexibility in decision making because now we have all necessary data related to demography change, Data scientists/analysts and SME's make sense of this data converging to organizational goals

Architecture Strategy

Data Scientists

Cloud

Govt Census Data
3rd party data-FB/ google
Real estate   Geodata

webscrapping

HDFS
Files

Data Lake

Semistructured

- Hot data
- Cold data
- Warm data

Analytics

IoT / visual
sensors installed
in Pharmacy store
collecting real
time data

Rest API
MQTT

OLTP

ETL/Data Pipeline

CDC/Streaming

Data
Virtualization

Trends
Insights
Prediction

CRM
ERP
Supply chain
Order management
Fixed assets
Billing
HR
Financials

MDM

DWH

Datamart

*Cold data
Canned
reports

Data Analyst

Data Governance , Quality, Regulators,Documentation,security

Migration pattern NYC by Borough during Pandemic

Source : Ref

Ref:

- *Data Strategy & the EDE—Peter Aiken, Todd Harbour*

- *https://blog.datacite.org/datacite-vision-to-reality/*

- *https://www.youtube.com/watch?v=AZMBtRgmRJA*

- *https://comptroller.nyc.gov/reports/the-pandemics-impact-on-nyc-migration-patterns/*

- *https://www.census.gov/content/dam/Census/data/developers/api-user-guide/api-guide.pdf*