How Big Data / IoT leverages the power of open source to solve Healthcare use cases



Manidipa Mitra
Director, Big Data CoE
ValueLabs

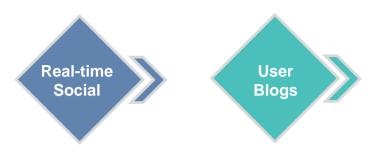


#### What's inside?

Market research platform for pharma

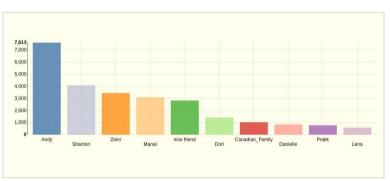
Digital Care Management

## Market research platform for pharma – Key influencer, Market intelligence, Customer sentiment

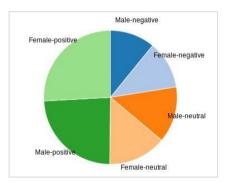












- Key trends
- Themes
- Risks

Sentiment Analysis

## Popular blogs and message boards to scrape

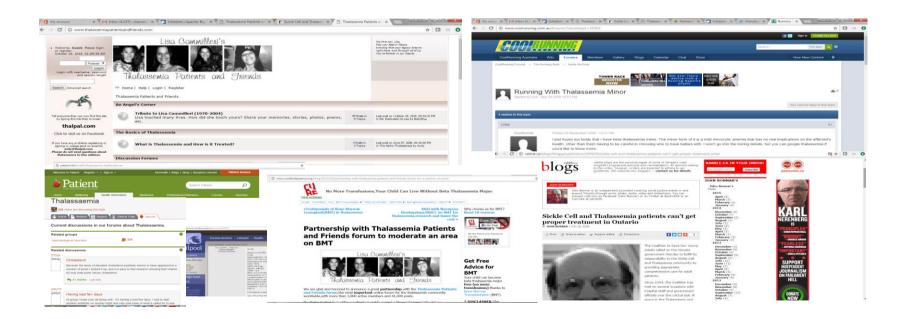
What to scrape?



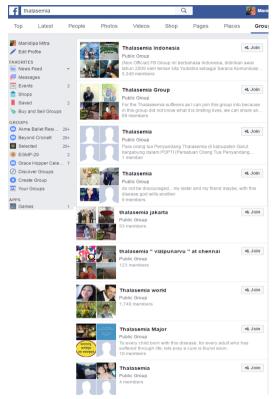
Popular sites



Domain inputs

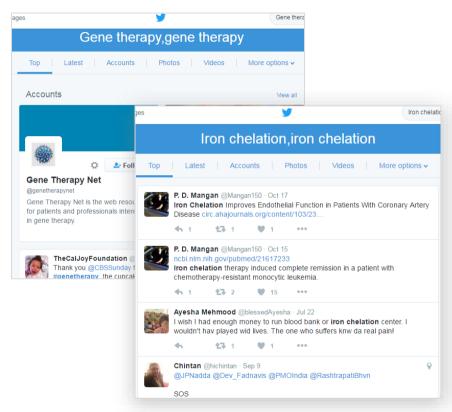


#### Relevant groups on Facebook



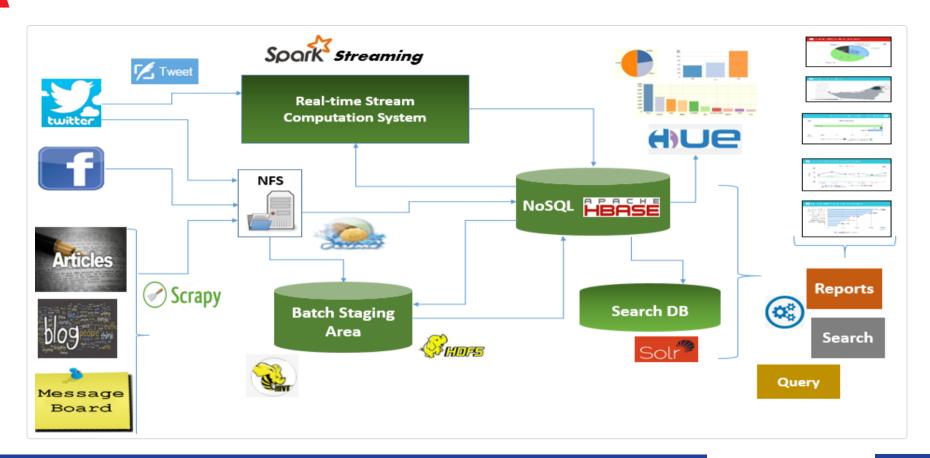


#### **Relevant Twitter tags**

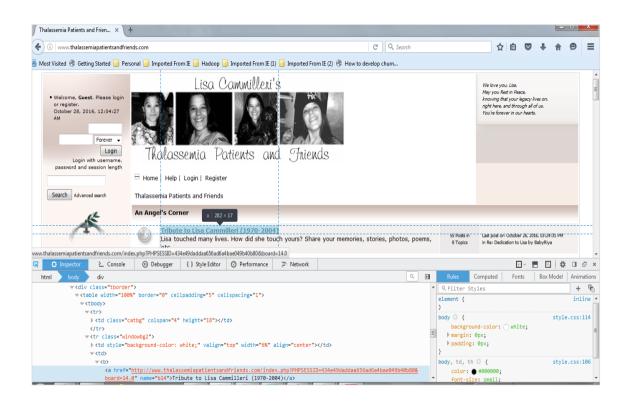




## **Architecture**



#### Relevant data collection via Scrapy



## 29963 posts collected Data includes the following:

- · Post text
- · Post subject
- Post author
- Post URL
- · Post date
- · Post reply no.
- Topic read count
- · Author gender
- Author location
- · Author type
- Author total posts



### **Topic Modelling**

## Thalassemia Treatment



#### Treatment

Gene therapy

Iron chelation

Gene Editing

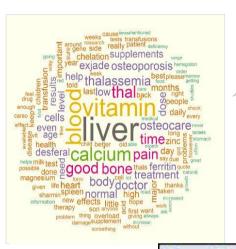
Allo-Immunization

Transfusion dependent thalassemia

Non-Transfusion dependent thalassemia

Blood Supply/Blood Availability

blood transfusion



Thalassemia Symptoms

#### Symptoms

Asthenia

HepC/Liver issues

Liver function

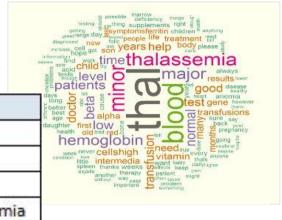
Osteoporosis

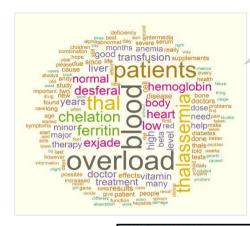
Myalgia (muscle pain)

## **Topic Modelling**

Thalassemia Diagnosis

Diagnosis Beta-plus thalassemia Beta-zero thalassemia HbE/ß-thalassemia Hemoglobin E beta thalassemia Hemoglobin E B-thalassemia Delta-Beta thalassemia Erythroblasticanaemia Microcytemiabeta type Beta-Thalassemia intermedia Beta-Thalassemia major Beta-Thalassemia minor





Thalassemia Side effects

Side effects

Hypochromia

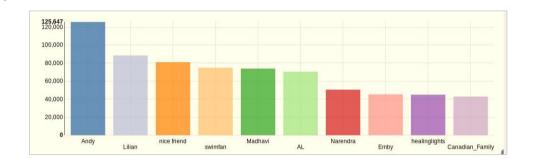
Abnormal globin

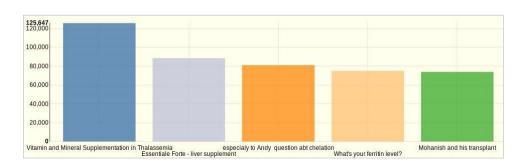
Iron overload

Hemosiderosis

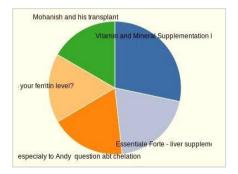
Transfusionaliron overload

#### **Most viewed posts**

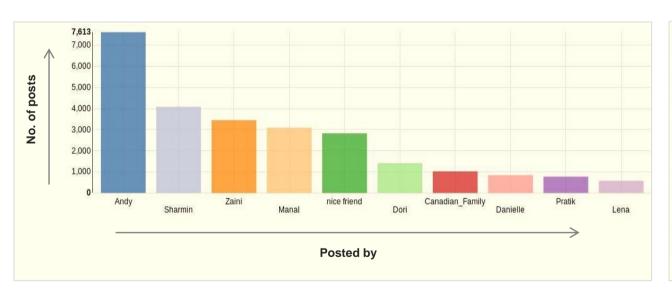




0	Vitamin and Mineral Supplementation in Thalassemia	Andy	125647
1	Essentiale Forte - liver supplement	Lilian	88510
2	especialy to Andy question abt chelation	nice friend	81031
3	What's your ferritin level?	swimfan	74928
4	Mohanish and his transplant	Madhavi	73911
5	Latest Update On AQEEL	AL	70528
6	Thal Minor Pregnancy Posts	Narendra	50531
7	Question for Andy	Emby	45401
8	The Carao Trial - How effective is it & who benefits most etc	healinglights	44982
9	Devastating News	Canadian_Family	42909

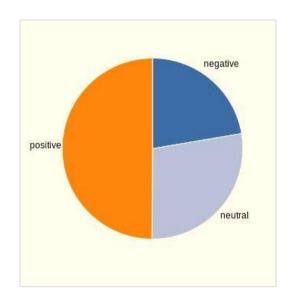


#### **Active author / Key opinion leader**

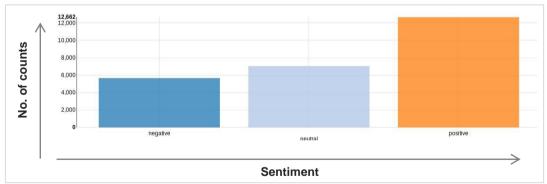


Andy	7613
Sharmin	4082
Zaini	3446
Manal	3087
nice friend	2826
Dori	1415
Canadian_Family	1025
Danielle	848
Pratik	776
Lena	581

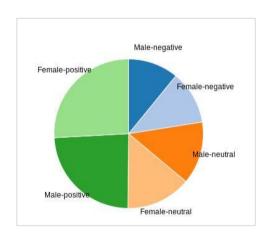
#### **Sentiment analysis**

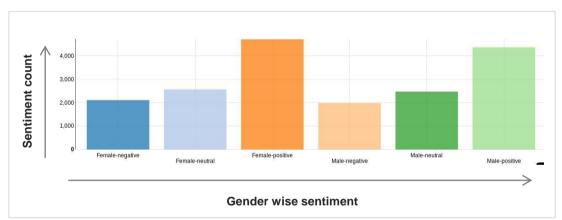




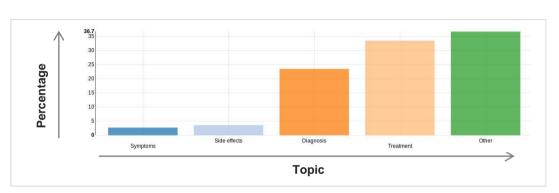


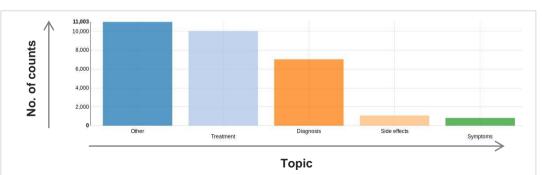
#### Gender wise sentiment

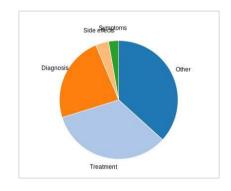




#### Segmentation on discussion





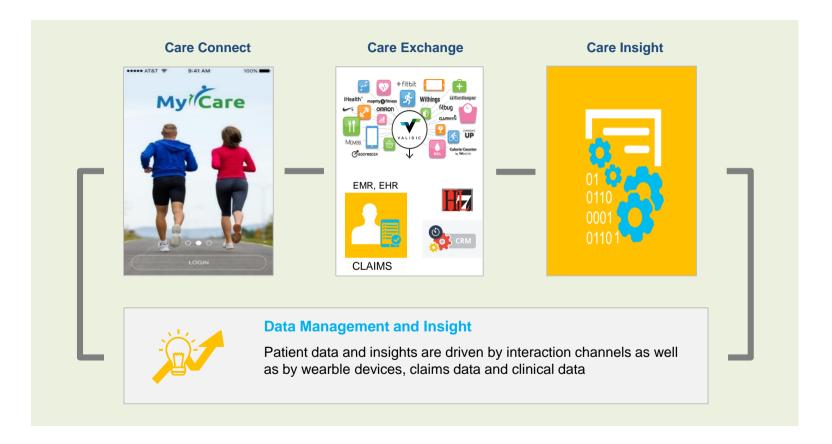


Topic	No. of count	s %
Other	11003	36.7
Symptoms	823	2.7
Diagnosis	7038	23.5
Treatment	10035	33.5
Side effect	1069	3.6

What's inside?

Digital Care Management

## **Digital Care Management – Analytics platform enables longitudinal view of patients**

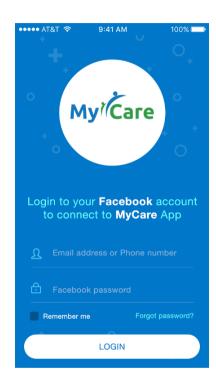






## Sample screens – DILO App – Login

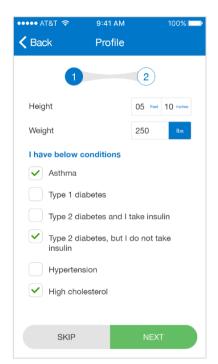


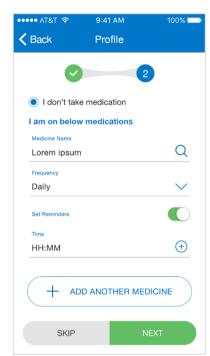


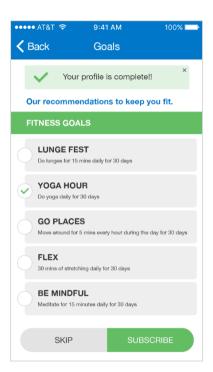


## Sample screens - DILO App - Profile

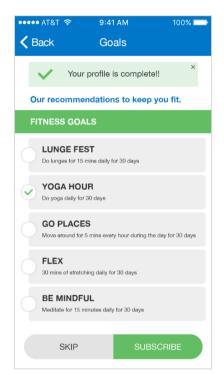


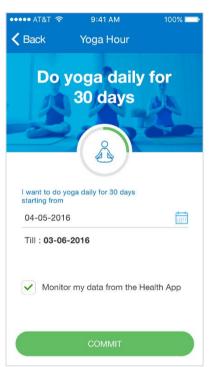


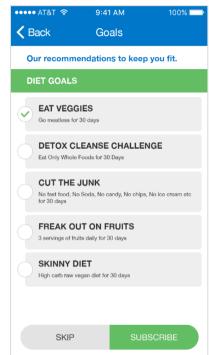


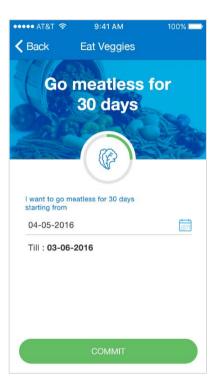


## Sample screens - DILO App - Goal setup

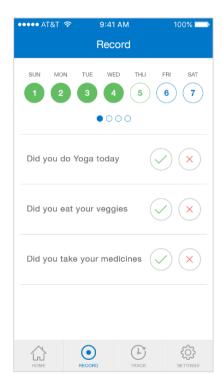


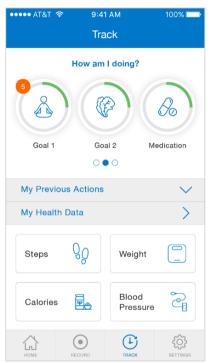


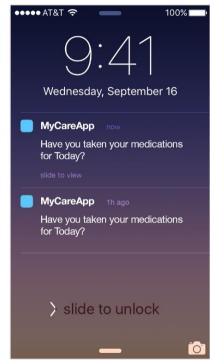


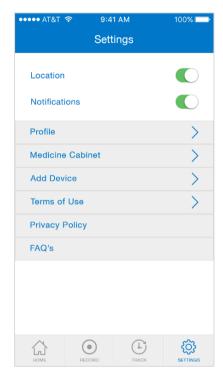


## Sample screens - DILO App - Record | Track | Notify





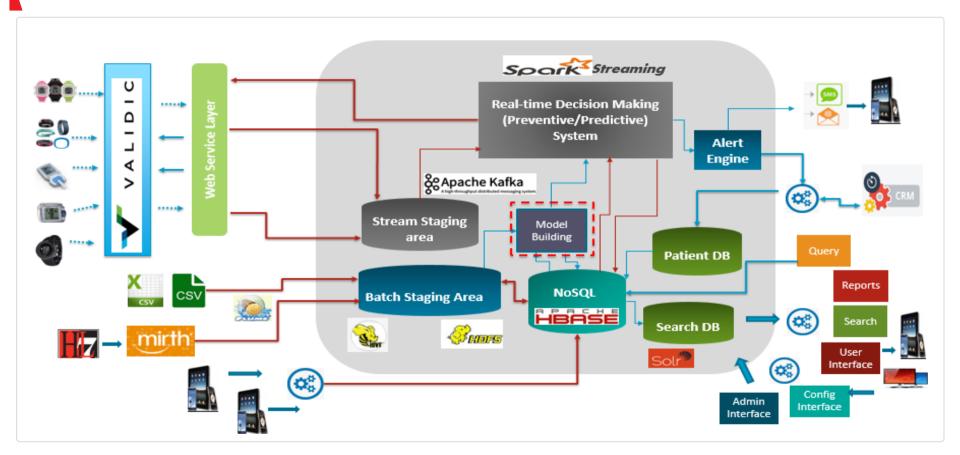




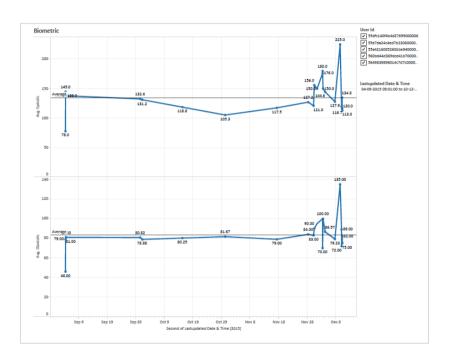


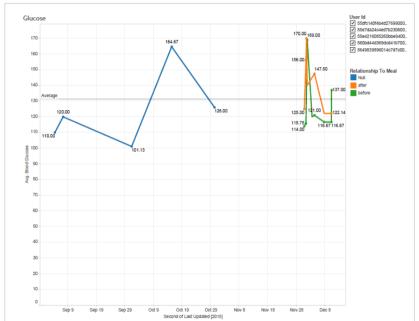
# **Care Exchange**

## DCM - End-to-end architecture

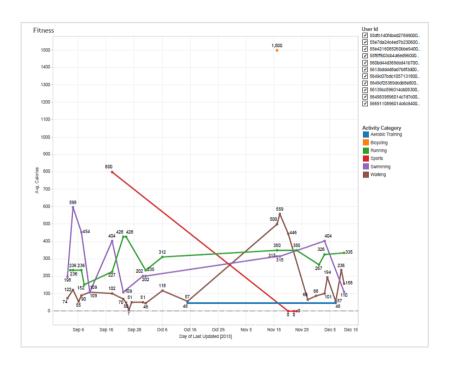


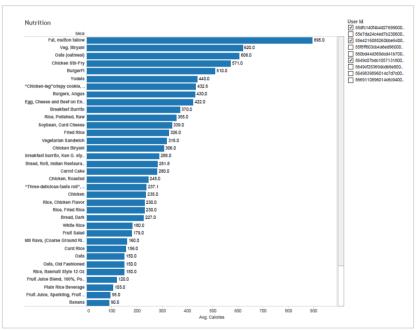
## Insights from wearables data



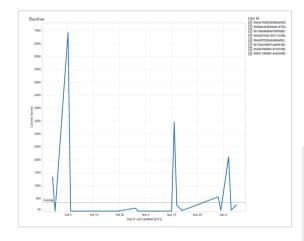


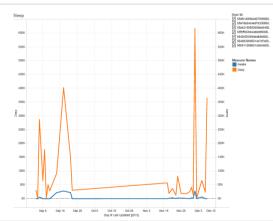
## Insights from wearables data

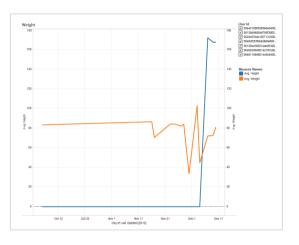




## Insights from wearables data







## Thank You!

