

Use cases for the Liquid Galaxy for Big Data.

Use Case meaning: a application of the platform for a Pharmacy industry and healthcare.

Pharmacy industry get a lot of data and want to represent those on a big display like the Liquid Galaxy.

Big data challenges include capturing data, data storage, data analysis, search, sharing, transfer, visualisation , queryng, updating and information privacy .There are three dimensions to big data known as Volume, Variety and Velocity.

I will give you ideas on how to treat pharmaceutical product consumption data to optimally manage and improve the health of people, how to represent the data, treat them and how to interpret them through the laboratories of the Liquid Galaxy

Healthcare

Big data analytics has helped healthcare improve by providing personalized medicine and prescriptive analytics, clinical risk intervention and predictive analytics, waste and care variability reduction, automated external and internal reporting of patient data, standardized medical terms and patient registries and fragmented point solutions.

Some areas of improvement can be implemented. The level of data generated within healthcare systems is not trivial. With the added adoption of mHealth, eHealth and wearable technologies the volume of data will continue to increase. This includes electronic health record data, imaging data, patient generated data, sensor data, and other forms of difficult to process data. There is now an even greater need for such environments to pay greater attention to data and information quality.

"Big data very often means 'dirty data' and the fraction of data inaccuracies increases with data volume growth." Human inspection at the big data scale is impossible and there is a desperate need in health service for intelligent tools for accuracy and believability control and handling of information missed. While extensive information in healthcare is now electronic, it fits under the big data umbrella as most is unstructured and difficult to use.

Lately, the term "big data" tends to refer to the use of predictive analytics, user behavior analytics or certain other advanced data analytics methods that extract value from data, and seldom to a particular size of data set

Application in the pharmaceutical and healthcare industry.

To establish new lines of research in this industry for the future: to stimulate the immune systems of patients and reduce the consumption of highly expensive and impacting medicines in the environment.

1.- Consumption of drugs and medications by the population can be studied: antibiotics, typology anxiolytics, analgesic and anti-inflammatory

A record of data, of medications that are prescribed, bought and consumed, by populations and at country level, is required to plan improvements in this regard.

2.- Pollution that is generated at the level of cities: wastewater ...

- 3.- Use the data for an improvement in health: patients, seniors
- 4.-Study of the pharmaceutical industry and impact on the environment.
- 5.-Analysis of residual water in populations and establishment of quality improvements
- 6.- Make predictions of diseases that can occur, as well as their evolution and alternative treatments.
- 7.- Helping people to better manage their health by knowing their analyzes, habits and different aspects to improve

Large data sets are handled. The most common difficulties associated with the management of these amounts of data focus on the collection and storage, search, sharing, analysis, and visualization. In the visualization we would use the Liquid Galaxy laboratories.

The tendency to manipulate huge amounts of data is due to the need in many cases to include said information for the creation of statistical reports and predictive models used in various subjects, such as infectious disease data, population monitoring or the fight against its consumption of unused drugs.

The different types of data are treated: structured, unstructured and semi-structured.

And the origin of the data according to the following category:

- Generated by people: sending emails or messages through WhatsApp, email ... transactions, marketing
- Machine-machine sensors of vital signs in medicine
- Biometric: There are amounts of data generated by biometric readers such as retina scanners, fingerprint scanners, or DNA string readers. The purpose of these data is to provide security mechanisms and are usually guarded by defense ministries and intelligence departments. An example of application is the DNA cross between a sample of a crime and a sample in our database

Liquid Galaxy laboratories can serve:

1. As platforms extract, transform and load (ETL). Its purpose is to extract the data from the different sources and systems, then to make transformations (data conversions, dirty data cleanup, format changes ...) and finally load the data in the database or data warehouse specified.
2. For Data Analysis: Association, Data Mining, Grouping, Text Analysis ...
3. For the visualization of data: infographics have become a viral phenomenon, where the results of the different analyzes on our data are collected, and they are an attractive, entertaining and simplified material for mass audiences
4. Visualization of the data in the screens of the population with more consumption of drugs, medication and distribution of the consumption in the different populations to be able to make the correct corrections
5. Visualization of the data on the screens of populations with epidemics: record of flu, specific diseases, tumors ... to determine if there are specific causes of greater incidences of diseases in certain areas and treat them .
6. Visualization in the screens of the analytical of pollutants in the waters that come from medicaments consumed by the population

7. Know the most serious infectious diseases in an area to make a better diagnosis and treatment, compare it with the less infected areas

Example of use in Health Research and Medicine :

In 2009, the world experienced an influenza A pandemic, called swine flu or H1N1. The web Google Flu Trends was able to predict it thanks to the results of the searches. Flu Trends uses data from users' searches that contain symptoms similar to the flu illness and groups them according to location and date, and is able to predict flu activity up to two weeks in advance more than traditional systems .

More specifically in New Zealand, 48 they crossed Google's flu trends data with existing data from national health systems, and verified that they were aligned. The graphs showed a correlation with searches for symptoms related to the flu and the spread of the pandemic in the country. Countries with poorly developed forecasting systems can benefit from a reliable and public prediction to supply their population with timely security measures.

Example of user health management.

And the Liquid Galaxy can treat the data to be effective

"My Health" is a program in Catalonia, is a space for consultation, personal and non-transferable, where you can have health information and electronic procedures safely and confidentially.

Where do my Health data come from?

When healthcare professionals enter data in your medical records of the center where they are served, through an automated system, the most important data is incorporated into a repository of data and published in your shared clinical history (HC3) and La Meva Health for them to be consulted.

What is the shared clinical history in Catalonia (HC3)?

It is a tool of the Ministry of Health of the Generalitat de Catalunya which incorporates the most relevant data about a person's health. Healthcare professionals, upon prior approval and authorization, can share and check the information on the clinical history of the people they serve, from the different hospitals and primary care centers. This prevents the repetition of tests or having to ask for reports if you move from town to town.

Do you see all the data from a center where they have attended me?

This is a project that incorporates progressively the different centers of the public health network, but it is not yet deployed throughout the territory of Catalonia. Therefore, there is the possibility that your center or any of the centers where you have been attended has not yet entered the information.

Who has access to?

The person holding the CIP (personal identification code) of the individual health card, who is of legal age and who has a digital certificate or who has requested the password in his primary care center (CAP). The persons authorized by the owner may also access it.

What do I have to do to access it?

To access you need the personal identification code (CIP) of your individual health card (TSi) and a digital certificate or password. You can ask your password in person in your CAP.

What data are there?

You will find the information generated by the healthcare provided in all public health centers:

Of the primary care centers where you have been attended: diagnoses, prescribed medications , vaccines (immunizations)

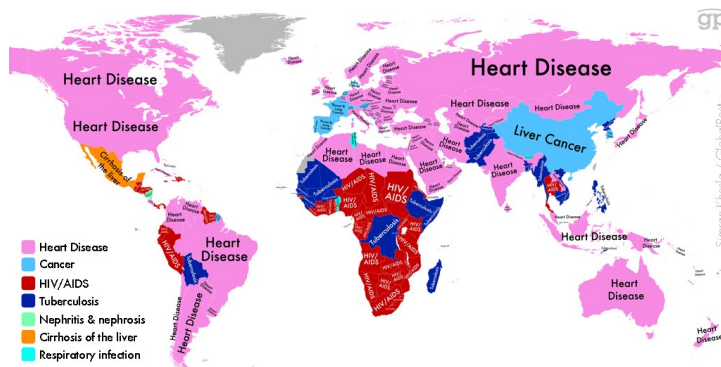
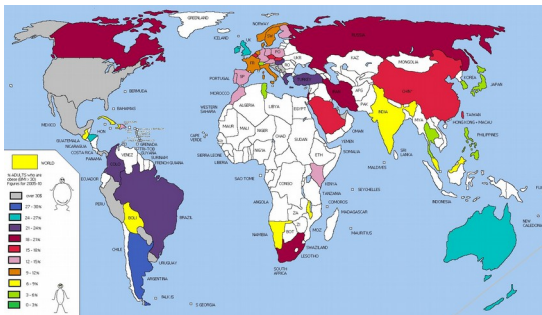
*Of the attention received to hospitals (in pdf format): reports of admission
emergency reports reports from doctors specialists*

Of trials or interventions that you have done (in pdf format):

laboratory reports (results of analyzes) image diagnostic reports (radiology) reports of other tests you have done

You can also check the visits and scheduled tests, the waiting list in case you are pending to undergo a surgical intervention with guaranteed maximum waiting time and the document of anticipated wishes, if you have already registered.

- Clinical reports
 - Vaccines
 - Medication
 - Wills and donations: donors register organs and tissues
 - Waiting lists I can know when they will work.
 - Surgical interventions.
 - Procedures: eConsultation
 - And Applications :
- Have an extranet where you can access diagnostic results and patient's medical history.
Some of the most well-known applications in this field of computer science: diagnostic imaging, telemedicine, hospital management systems and the electronic clinical record.



https://es.wikipedia.org/wiki/Big_data

https://es.wikipedia.org/wiki/Inform%C3%A1tica_en_salud

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