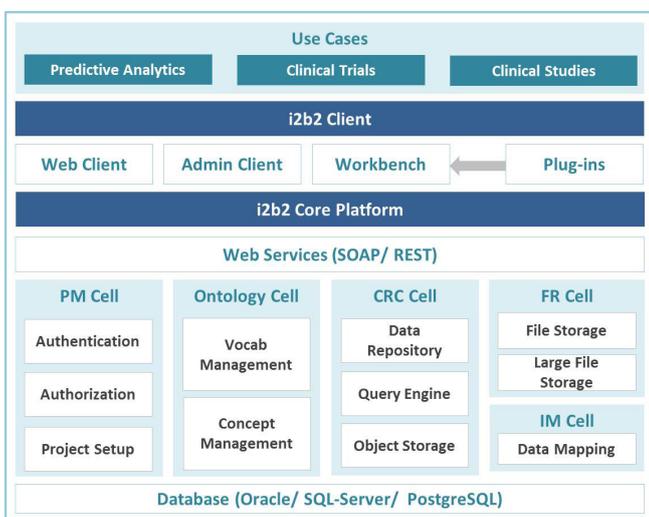


# Case Study: Clinical Research and Patient Recruitment using i2b2

## Client Requirements

Client provides a global, centralized data network to enable collaboration between pharmaceutical and provider organizations for enhanced clinical trials and patient recruitment.

Client needed to set-up and configure i2b2 and integrate it with their existing systems to enhance the quality of their clinical trial systems. The i2b2 framework was required to identify cohorts and improve patient recruitment efficiency for clinical research. Given its expertise in clinical informatics, healthcare interoperability and life sciences domain, CitiusTech was selected by the client to set-up and interface i2b2.



## CitiusTech Solution

### Requirement Analysis

CitiusTech put together a dedicated team of life sciences domain experts, ETL professionals and clinical informatics specialists for i2b2 implementation to enhance the capabilities of i2b2 platform.

CitiusTech designed the solution with key features that included - ability to view clinical data in a web-based form,

ability to view data directly into i2b2 and generate reports and interactive visualizations.

## Solution Design

- **i2b2 Configuration and Upgrade**
  - Install, configure and upgrade i2b2 with Oracle/ PostgreSQL server on UNIX/ Windows
  - Implement generic interfaces for i2b2 hives/ cells
- **Data Modelling and Transformation**
  - Support standard models used by EMR vendors such as EPIC, ALLSCRIPTS, URIDE, GE
  - Transform and load data for inpatient and outpatient encounters with diagnosis (ICD9/ ICD10), procedures (ICD9/ CPT), medication (RxNorm), vital signs and lab results (LOINC)
- **i2b2 Customization**
  - Optimize i2b2 core cells for performance improvement
  - Customize i2b2 workflows

## Development and Deployment

CitiusTech installed and integrated multiple i2b2 instances on client system platforms. The solution design extended i2b2 framework with new capabilities including modifying CRC cell to improve query performance, integrating with customer's active directory system for user configuration and building custom identity management hive for mapping de-identified patient data.

The solution enabled i2b2 to easily integrate with various homogeneous and disparate systems, allowing authorized users to query, identify and analyze patient cohorts using inclusion and exclusion criteria.

## Value Delivered

By partnering with CitiusTech, the client was able to:

- Utilize the installed instance of i2b2 to further enhance users' ability to analyze and report de-identified clinical data through their software
- Analyze and visualize data using predictive analytics, patient cohort identification and custom plugins
- Expedite data transformation process by developing ETL libraries as solution accelerators
- Reduce time-to-market of its solutions

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## About CitiusTech

CitiusTech is a specialist provider of healthcare technology services and solutions to medical technology companies, providers, payers and life sciences organizations, with over 2,700 professionals worldwide. CitiusTech's services and solutions include healthcare software development, healthcare interoperability, regulatory compliance, BI/analytics, consumer engagement, care coordination and population health management. CitiusTech helps customers accelerate innovation in healthcare through a number of solutions and accelerators for clinical quality reporting, healthcare big data, cloud computing, mobile health and predictive analytics. With cutting-edge technology expertise, world-class service quality and a global resource base, CitiusTech consistently delivers best-in-class solutions and an unmatched cost advantage to healthcare clients worldwide.

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