Deep Pharma Intelligence

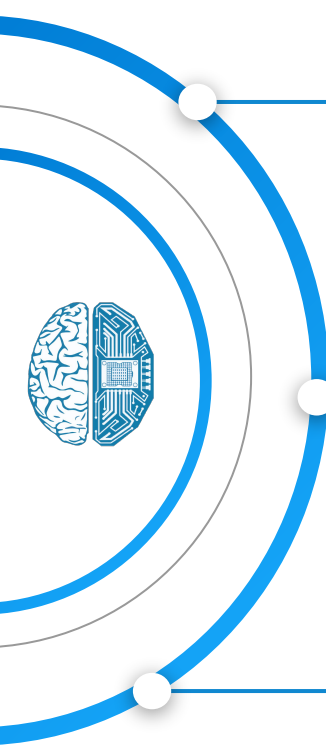# Market Intelligence System and AI-driven Big Data Analytics Dashboard

www.deep-pharma.tech

About Deep Knowledge Group

Deep Knowledge Group is a consortium of commercial and non-profit organisations active on multiple fronts in the realm of DeepTech and Frontier Technologies (AI, Longevity, FinTech, GovTech, InvestTech), ranging from scientific research to investment, entrepreneurship, analytics, media, philanthropy and more.

Deep Knowledge Group runs several data-driven **investments and financial vehicles**

DEEP KNOWLEDGE VENTURES

LONGEVITY CAPITAL

Longevity Financial Advisors

LONGEVITY CARD

Deep Knowledge Group's **analytical subsidiaries** are world leaders in analytics for DeepTech and Longevity industries

AGING ANALYTICS AGENCY

Big Data Analytics Department

DEEP KNOWLEDGE ANALYTICS GOVTECH DIVISION

FemTech Analytics

NeuroTech Analytics

COVID-19 ANALYTICS

SpaceTech Analytics

DEEP KNOWLEDGE ANALYTICS

DEEP PHARMA INTELLIGENCE

INNOVATION EYE

InvestTech Advanced Solutions

Deep Knowledge Philanthropy pioneers several infrastructural **social impact projects**

DEEP KNOWLEDGE PHILANTHROPY

Swiss Longevity Valley

LONGEVITY INTERNATIONAL

Biogerontology Research Foundation
Prevent. Restore. Preserve.

LONGEVITY CHARITY

The Problem

The IT platform to be developed is said to cover the following:

- What type of services are provided by a given entity
- Do these services, as well as other parameters, indicate the sustainability of the entity
- What are the competitors of a given entity and how one could compare this entity to its peers
- What phases of drug discovery a given entity tries to cover
- What are the most expedient acquisition scenarios for a given entity.

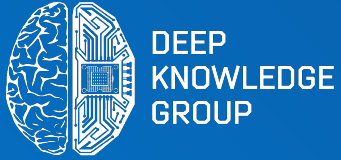**The key-points mentioned above indicate the following features of the IT platform:**

- An existence of a database with the factual information on every entity
- A need in machine learning applications to extract and then associate certain 'tags' with every entity to clarify the drug discovery phase, as well services provided
- A need in machine learning applications to create a meaningful entity-to-competitor analysis
- A need in machine learning applications to create a recommendation system able to advise on acquisition specifics.

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As a result, the following concept of the platform is created.

The Solution — AI-driven Big Data Analytical Dashboard

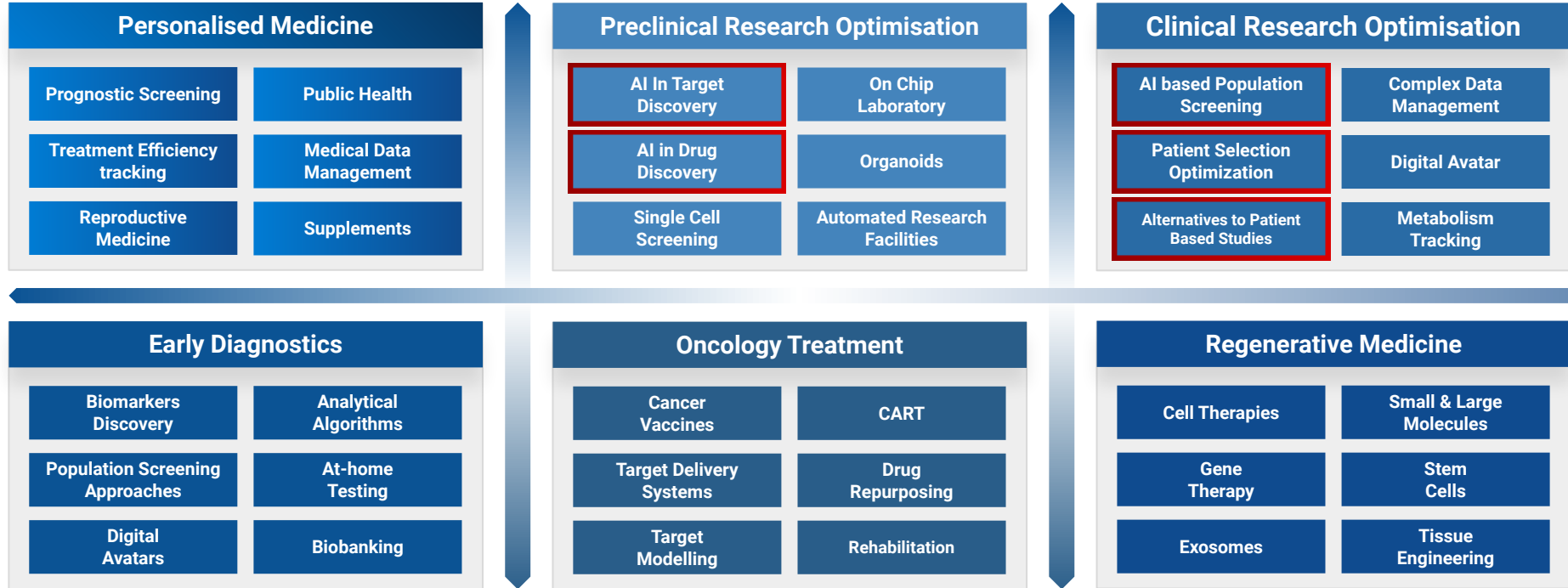# AI Engine of Big Data Analytical Dashboard: Data Science behind the IT Product

Note: below, we describe the toolkit that we implement in other Deep Knowledge Group's projects and will use to build this Tailor-Made Market Intelligence System

Disruptive Technology in Pharma Framework

Current focus of **Deep Pharma Intelligence (DPI) Dashboard** is aimed at **Artificial Intelligence role in Drug Discovery**. Yet, the **core strategic goal for DPI** is to expand dashboard coverage in order to **include all projected disruptive technologies** and companies that use them in the Pharmaceutical Industry. **The Framework visualizes all potential disruptive sectors in Pharmaceutical Industry which will be presented in Dashboard, while highlighted blocks are categories which are already covered.**

Personalised Medicine

Prognostic Screening	Public Health
Treatment Efficiency tracking	Medical Data Management
Reproductive Medicine	Supplements

Preclinical Research Optimisation

AI In Target Discovery	On Chip Laboratory
AI in Drug Discovery	Organoids
Single Cell Screening	Automated Research Facilities

Clinical Research Optimisation

AI based Population Screening	Complex Data Management
Patient Selection Optimization	Digital Avatar
Alternatives to Patient Based Studies	Metabolism Tracking

Early Diagnostics

Biomarkers Discovery	Analytical Algorithms
Population Screening Approaches	At-home Testing
Digital Avatars	Biobanking

Oncology Treatment

Cancer Vaccines	CART
Target Delivery Systems	Drug Repurposing
Target Modelling	Rehabilitation

Regenerative Medicine

Cell Therapies	Small & Large Molecules
Gene Therapy	Stem Cells
Exosomes	Tissue Engineering

Major Components of Data Science and AI Engine Architecture

Data Aggregation

Big Data Analytics System and Dashboard cover the datasets synthesized from various sources and having the different types of representation

Database Extension

The data sets behind the finalised data provided to users is subject to constant updating to ensure the precise results of analysis

Natural Language Processing (NLP) Engine

Advanced NLP-techniques are used for gathering and storing the multiparametric and high-dimensional data.

Components of Data Science and AI Engine
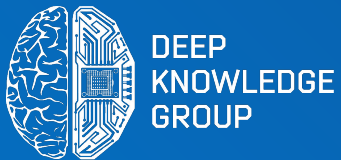
AI-Based Clustering

Embedded AI engine is able to find the interconnections and form the groups of entities having the similar characteristics

Companies Assessment with Machine Learning

Dashboards provide the ranking of both private and public companies based on the aggregated and constantly refreshed market data

AI-based Predictions

Big Data Analytics System and Dashboard has the modules able to forecast the possible ways of future traction of certain events (such as stock prices) based on the large sets of market data
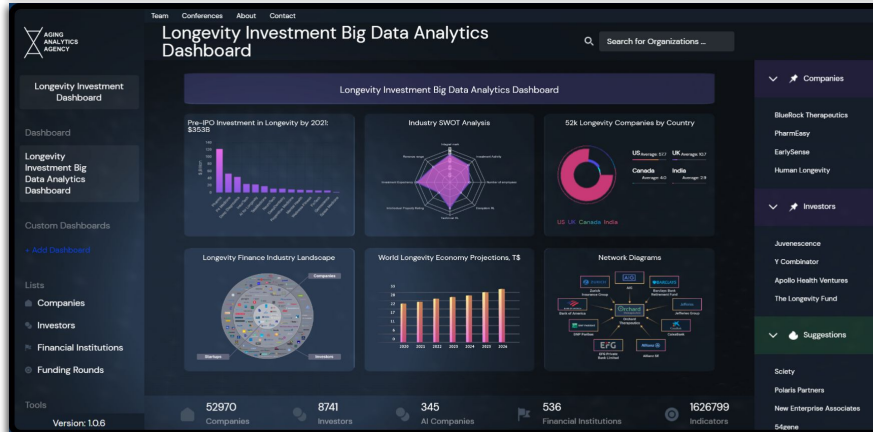
Data-focused
Tools and Solutions

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Advanced Visualization.
Dashboards Constructor

Key Features

E — Enables the creation of tailored and personalized analytical dashboards in a matter of minutes

A — All features that are available on other dashboards are already enabled

S — Save time and money on analyst training with a low-code solution

Y — You are the one who decides - purchase a white label solution or request creation-on-demand

Data-focused Tools and Solutions

Data visualization solutions to bring more clarity to the raw data

Intellectual Property and scientific-related data to indicate the actual company background

Investors and companies brought together to illustrate the under- and over-invested areas of the industry

Market stratification through the solutions and service the companies are currently offering

Data-focused Tools and Solutions

Market Intelligence Tools and Solutions

Private equity through the lens of data-driven solutions, showing the unique industry's insights
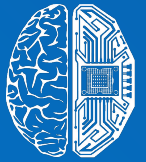
AI-driven competitors analysis for the companies assessment

AI-driven investors matching approach to form the most efficient syndicate for your allocations

Public equity-based benchmarking to understand the future perspectives of the new market players

Market Intelligence Tools and Solutions

Proposition Summary
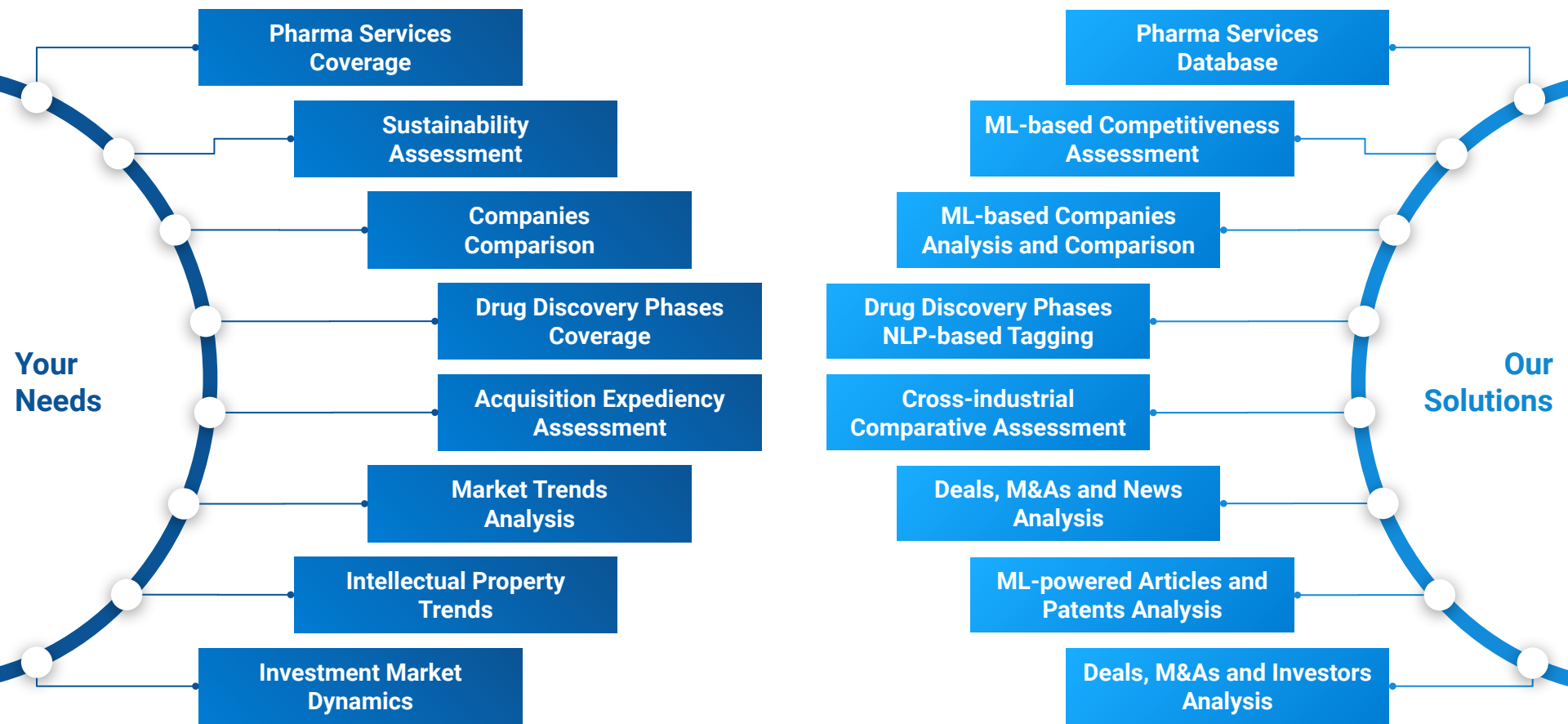
Proposition Summary: Your Needs and Our Solutions

Your Needs

- Pharma Services Coverage
- Sustainability Assessment
- Companies Comparison
- Drug Discovery Phases Coverage
- Acquisition Expediency Assessment
- Market Trends Analysis
- Intellectual Property Trends
- Investment Market Dynamics

Our Solutions

- Pharma Services Database
- ML-based Competitiveness Assessment
- ML-based Companies Analysis and Comparison
- Drug Discovery Phases NLP-based Tagging
- Cross-industrial Comparative Assessment
- Deals, M&As and News Analysis
- ML-powered Articles and Patents Analysis
- Deals, M&As and Investors Analysis

Proposition Summary

Deep Pharma Intelligence aims to provide an ecosystemic market intelligence solution for Pharmaceutical industry specialists, focusing on market-specific metrics and data for the AI in Pharma market, as well as general analytical solutions.
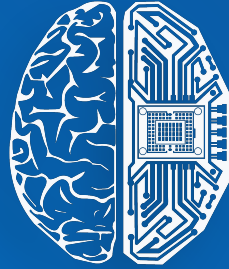
This precisely-designed solution will include data-focused market intelligence tools that provide maximal flexibility to the users. **The platform will also have a specific M&A and due diligence focus in order to provide valuable market insights for industry decision makers, optimizing the research-allocation process**.

This market intelligence solution will be a cloud-based analytical platform, encompassing both a set of pre-validated AI and Big Data Analytical system components developed for other projects in the Deep Knowledge Group consortium, as well as new unique intelligence approaches and technologies.

The flexibility of the platform development process will allow stakeholders to suggest new tools and features tuned to their specific needs, and **the overall development of the system will be made in stages so that the most important solutions (according to partner and stakeholder feedback) will be prioritized**.

While the analytical platform is going to be a solution available for many third parties, Deep Pharma Intelligence is ready to provide a wider range of additional benefits for TAKEDA, which can be discussed separately.

We are open to a mutually beneficial cooperation

Deep Pharma Intelligence

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