



metaphacts



ontotext

DRUG DEVELOPMENT & DRUG REPURPOSING WITH METAPHACTORY AND GRAPHDB

USE CASE

CUSTOMERS TELL US:



“We have **Questions...**

How can we **speed up the process of developing new therapies** while ensuring **drug safety** and efficiency?

Which **existing compounds** can we **repurpose** to treat new diseases?

Which diseases and drugs should we be focusing on as we **plan our portfolio** for the next five years?

How can we leverage all the research available to us to **save costs**?



... and we have **Data...**

Proprietary data: Detailed research on developed and tested compounds, successful drugs and abandoned trials, protein targets of tested compounds, pre-clinical and clinical trial setups, dosages and side effects...

Public data: Additional details on compounds, drugs, diseases, genetic associations, proteins and their coding genes, drug targets...



... but we're missing **Insights**”

Integration of data available in heterogeneous formats and across multiple business units is **cumbersome**.

End users struggle to extract meaningful insights from data sources and often require the help of IT departments.

Analyses are not reusable when business use cases and user needs change.

Highly dynamic research environments with high data velocity result in **frequent data updates** and data **consistency issues**.

The process of developing new therapies is **time-consuming and error-prone**.

Intuitive
Extensible
Reusable

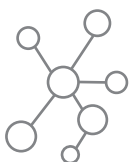
F.A.I.R. DATA, KNOWLEDGE GRAPH DRIVEN APPLICATIONS FOR LIFE SCIENCES AND PHARMA

Contextualized
Insightful
Data-driven

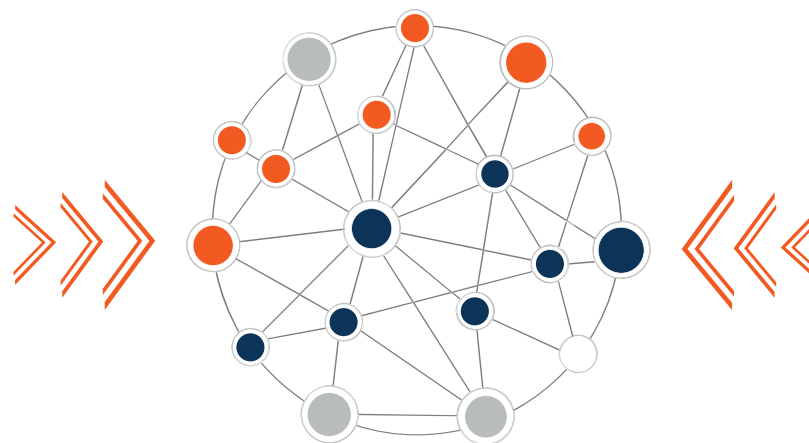
Web
Component
Library



Ontology
Modeling
Interface



Model-driven
Template
Pages



Master
Data



Datasets
Inventory



metaphactory

- **Model your domain** based on your specific information needs
- Build an **intuitive user experience** on top of your knowledge graph to
 - Search, filter and drill down
 - Discover, visualize and explore relations
 - Build insightful dashboards
 - Share results with colleagues
 - Add and edit data

Knowledge Graphs make your data F.A.I.R

A cross functional, machine-understandable network of data about genes and proteins, drugs and diseases, symptoms and side effects, clinical trials and success rates

Standardized data model, standard ontologies & vocabularies

Metadata to encode the meaning of data

Unique IDs to make all meta-levels searchable, accessible, shareable and traceable

Reusability as business use cases evolve

GraphDB

- **Integrate proprietary data** and **map your schema** to your diverse data sources
- **Access an inventory of 180+ preloaded public datasets and ontologies** in RDF format: genomics, proteomics, metabolomics, molecular interactions and biological processes, pharmacology, clinical, medical and scientific publications

EMPOWERING END USERS TO EXPLORE DATA AND GAIN MEANINGFUL & ACTIONABLE INSIGHTS

Systems biologists



- Goal:** Improve disease understanding by leveraging existing data to explore relations between proteins, diseases and drugs
- Question:** “Show me all interactions between proteins targeted by certain drugs in a tissue of choice”
- Result:** Comprehensive overview of proteins that can be linked to the disease at hand through their interaction with other proteins

Infectious disease experts



- Goal:** Consolidate research focus and prioritize strategically important compounds for inclusion into the research portfolio
- Question:** “Show me the number of infectious diseases a certain set of hits is associated with”
- Result:** Overview of promising compounds targeting multiple diseases and all related available research

Data scientists



- Goal:** Design safer and more efficient drug therapies by addressing other targets in the same pathway
- Question:** “Show me other targets in the same pathway of a known target of a certain disease”
- Result:** Dashboard highlighting relevant targets and compatible compounds, with additional filters for side effects and success rates

Immunologists



- Goal:** Develop new drug therapies by looking at protein-protein interaction partners of genes
- Question:** Question: “Show me kinase interaction partners for a certain gene”
- Result:** Dashboard listing kinase interaction partners, the drugs they can be targeted with, as well as other related details such as side effects or dosage

THE BOTTOM LINE

FROM IDEA TO PRODUCTION IN A FEW WEEKS

Combining a highly scalable and robust RDF triplestore like **GraphDB** with a large inventory of ready-to-use biomedical datasets / ontologies and Ontotext's proven methodology for semantic data integration, allows for the creation of large, highly interconnected knowledge graphs in just a few weeks.

The **metaphactory** low-code platform approach accelerates the implementation of intuitive search and data exploration capabilities and empowers end users to interact with huge volumes of data consumed from the knowledge graph underneath.

Constant data updates for all integrated public datasets support a live knowledge graph. Search and dashboards configuration based on data schema allow for data updates to be visible on the fly, without the need for manual intervention. And, as your business needs change, new data, new models and new interfaces can be added iteratively making the system reusable.



GET STARTED TODAY!

Experience data in context

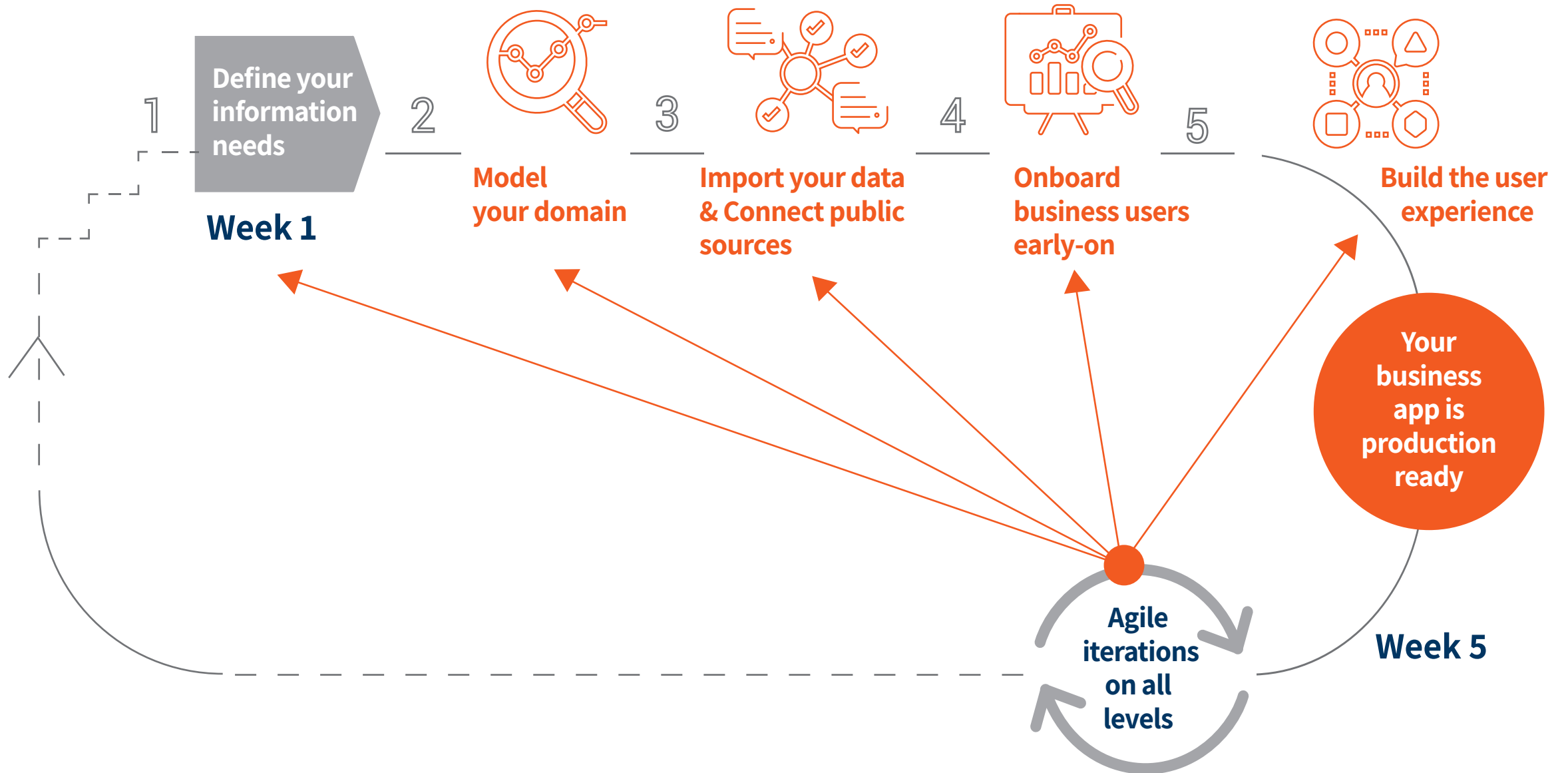
Deliver meaningful and actionable insights

Empower end users

Adapt as you go

Drive digital transformation

OUR APPROACH





metaphactory

metaphactory is a low-code, FAIR Data platform that supports knowledge graph management, rapid application development and end user-oriented interaction.

Customers in the Pharma & Life Sciences sector leverage metaphactory to build flexible and intuitive applications for drug discovery, drug repurposing, clinical trial scoping, and more.



The best RDF database for building scalable knowledge graphs. With GraphDB users can link and integrate diverse life sciences data, index it for semantic search and recommendation, and enrich it via text analysis to build use case-driven applications based on knowledge graphs.



SOUNDS INTERESTING?

**CONTACT US TO GET STARTED WITH
YOUR KNOWLEDGE GRAPH APPLICATION TODAY!**

**info@metaphacts.com
sales@ontotext.com
metaphacts.com/get-started**