

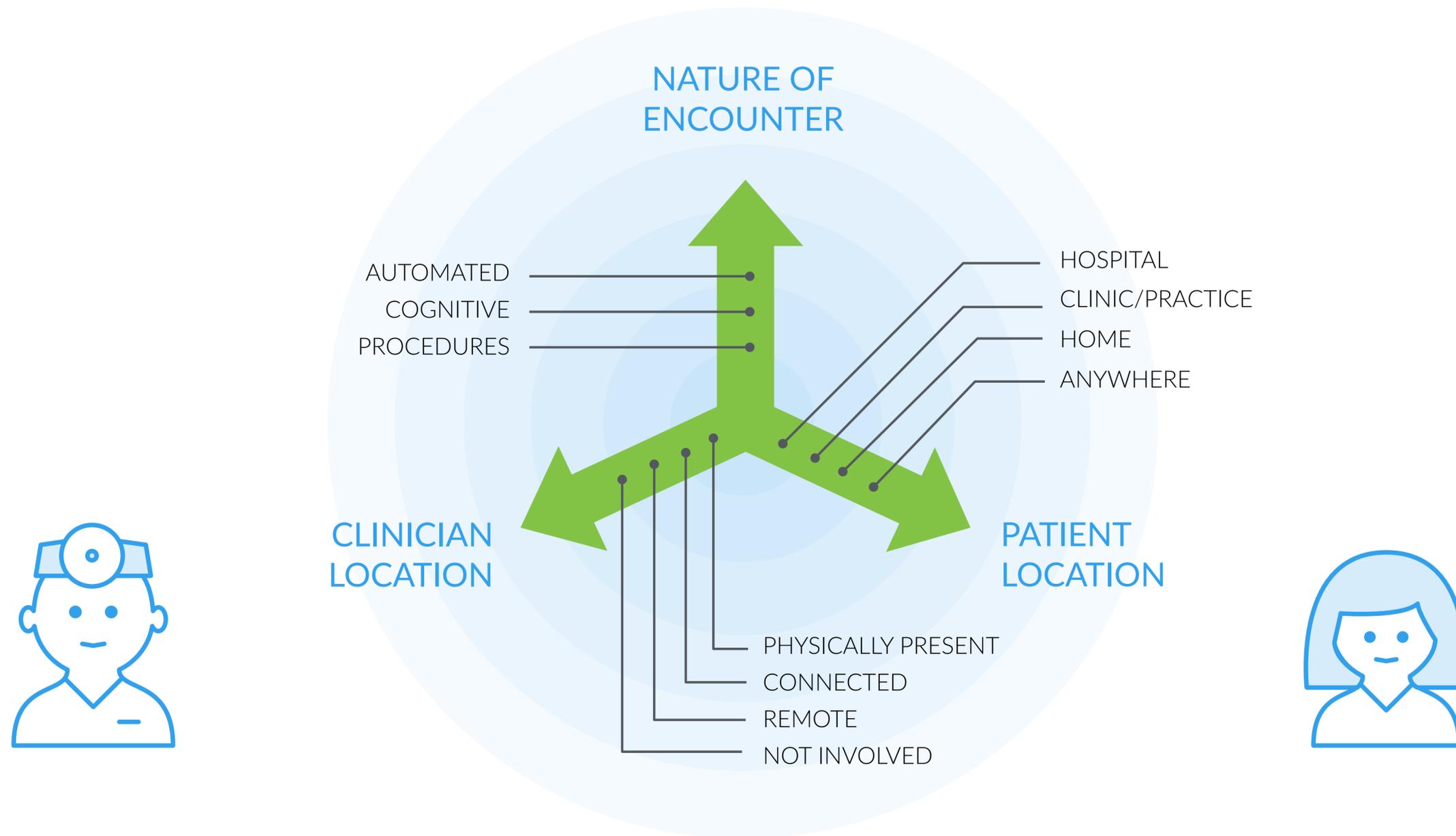
openEHR - Freeing the potential of EHR data for research

Anze Droljc

Head of product management - Clinical
applications



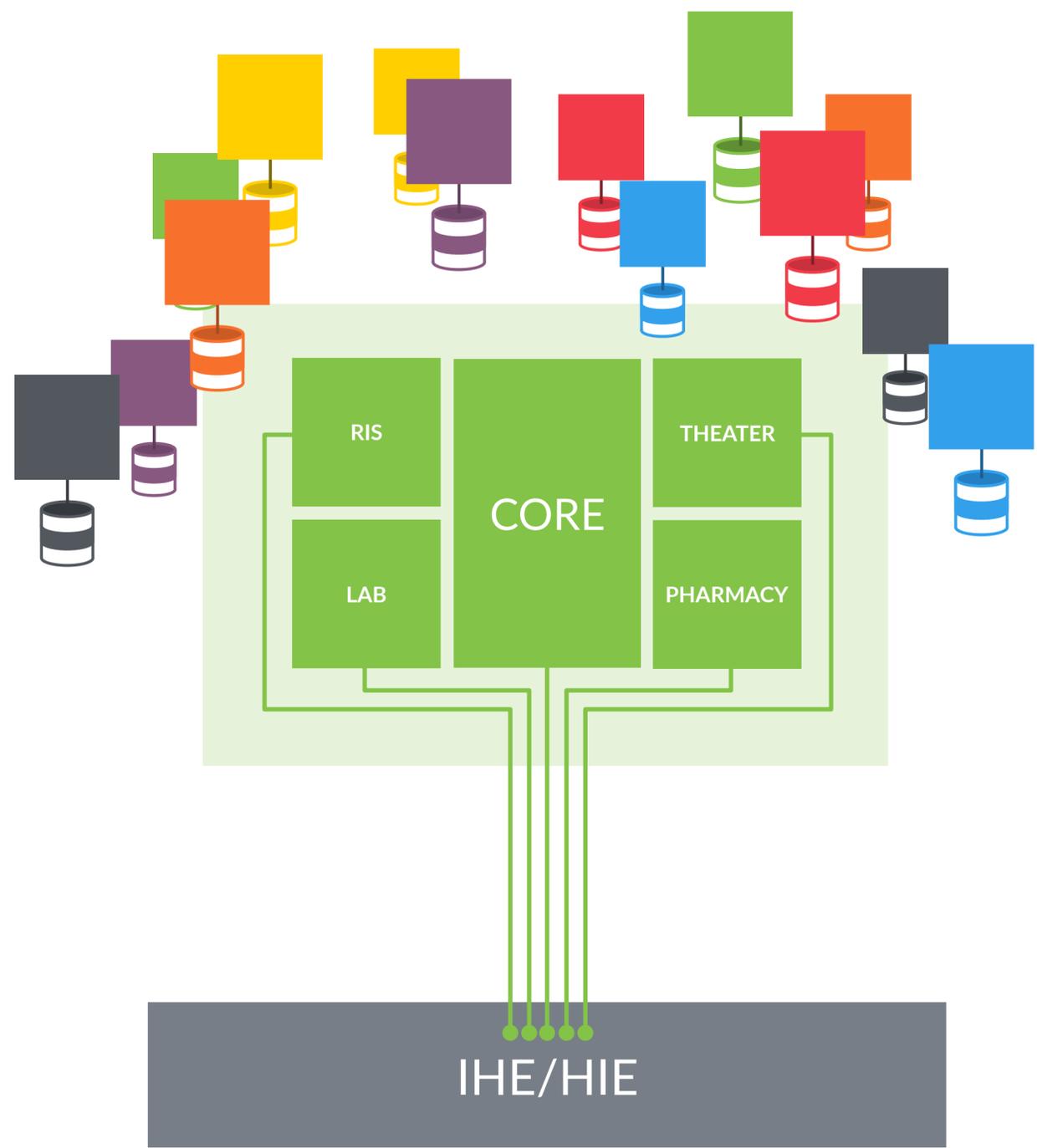
HEALTHCARE IS CHANGING

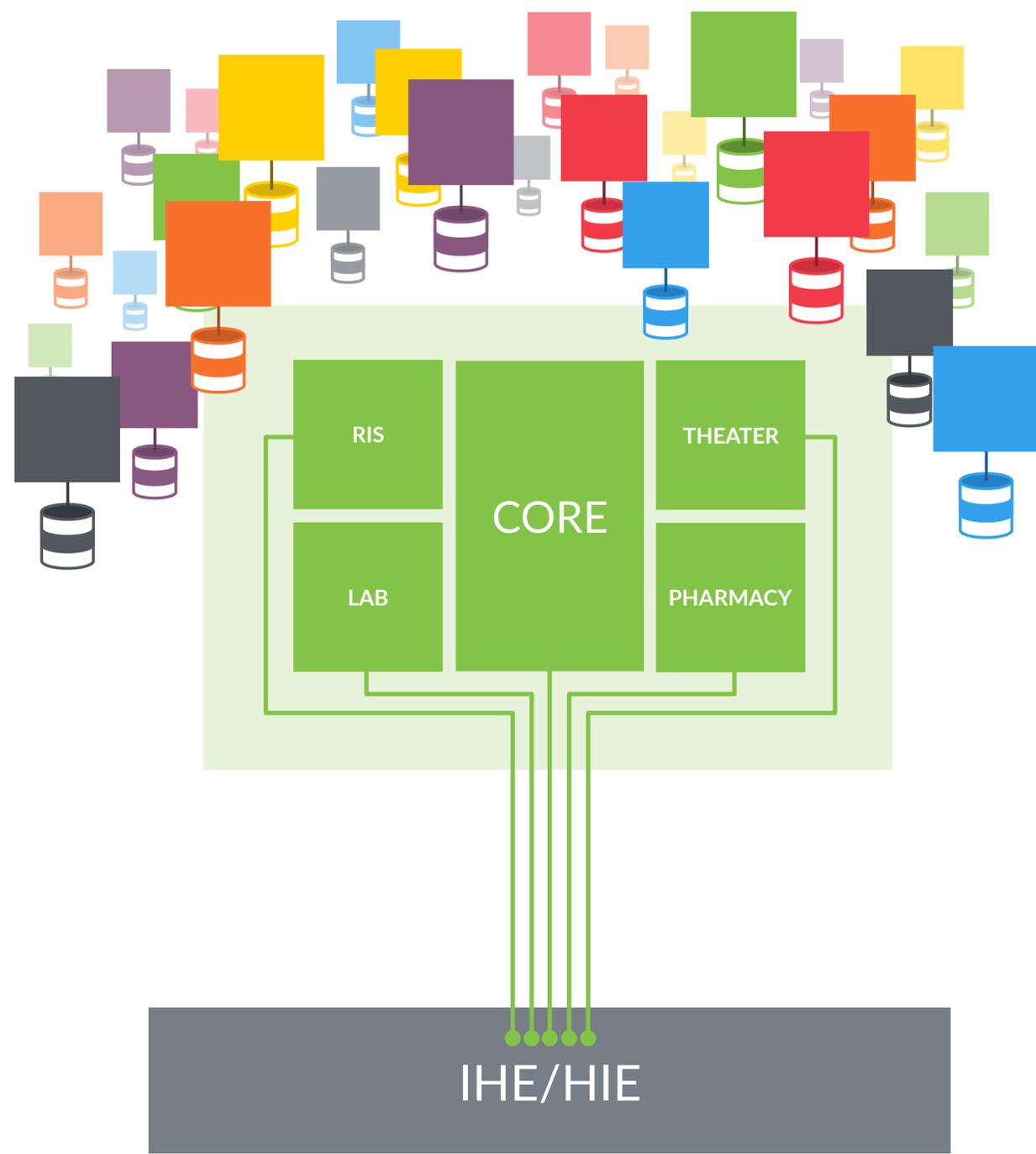


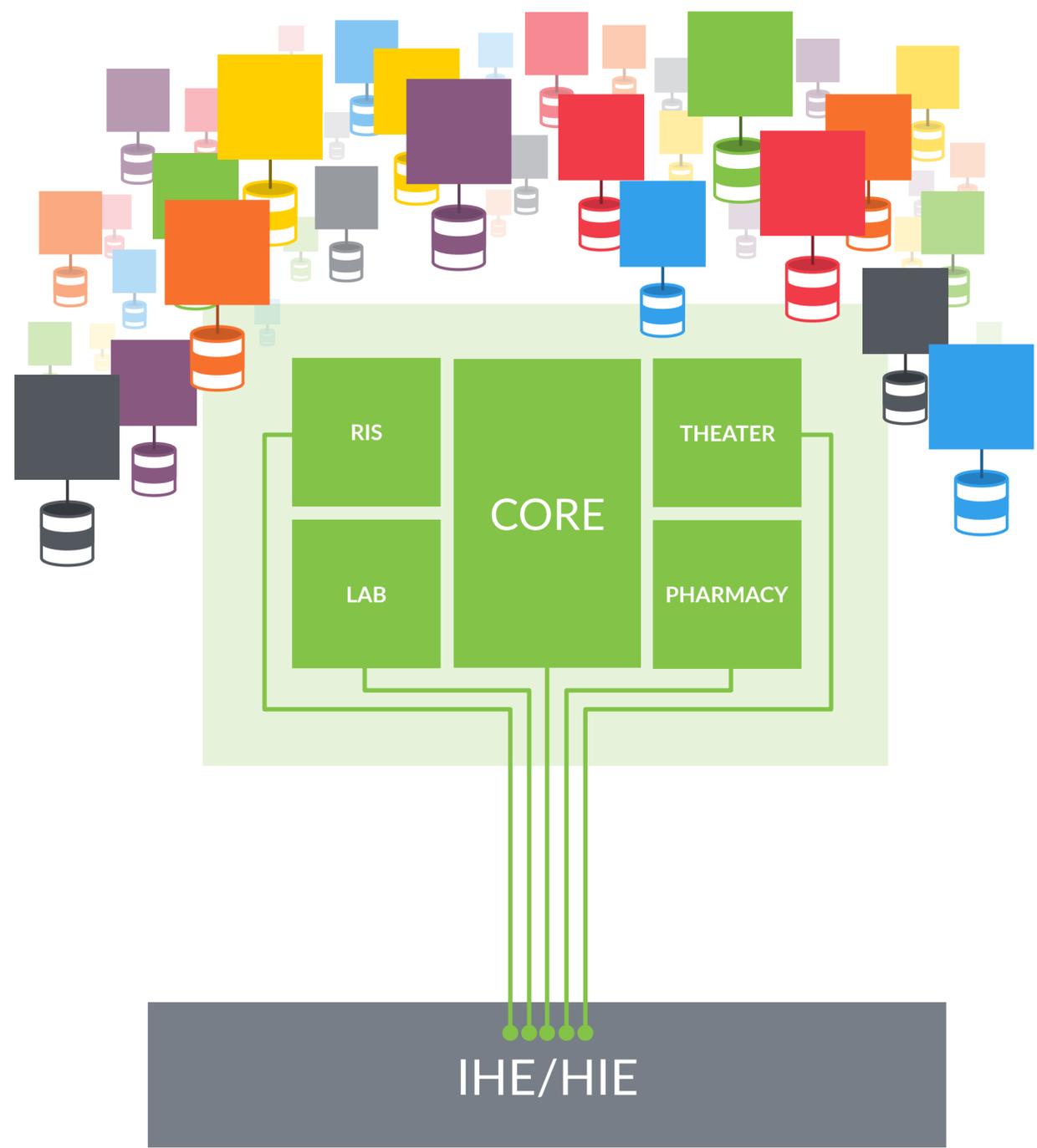
PERSONAL PHYSICIAN

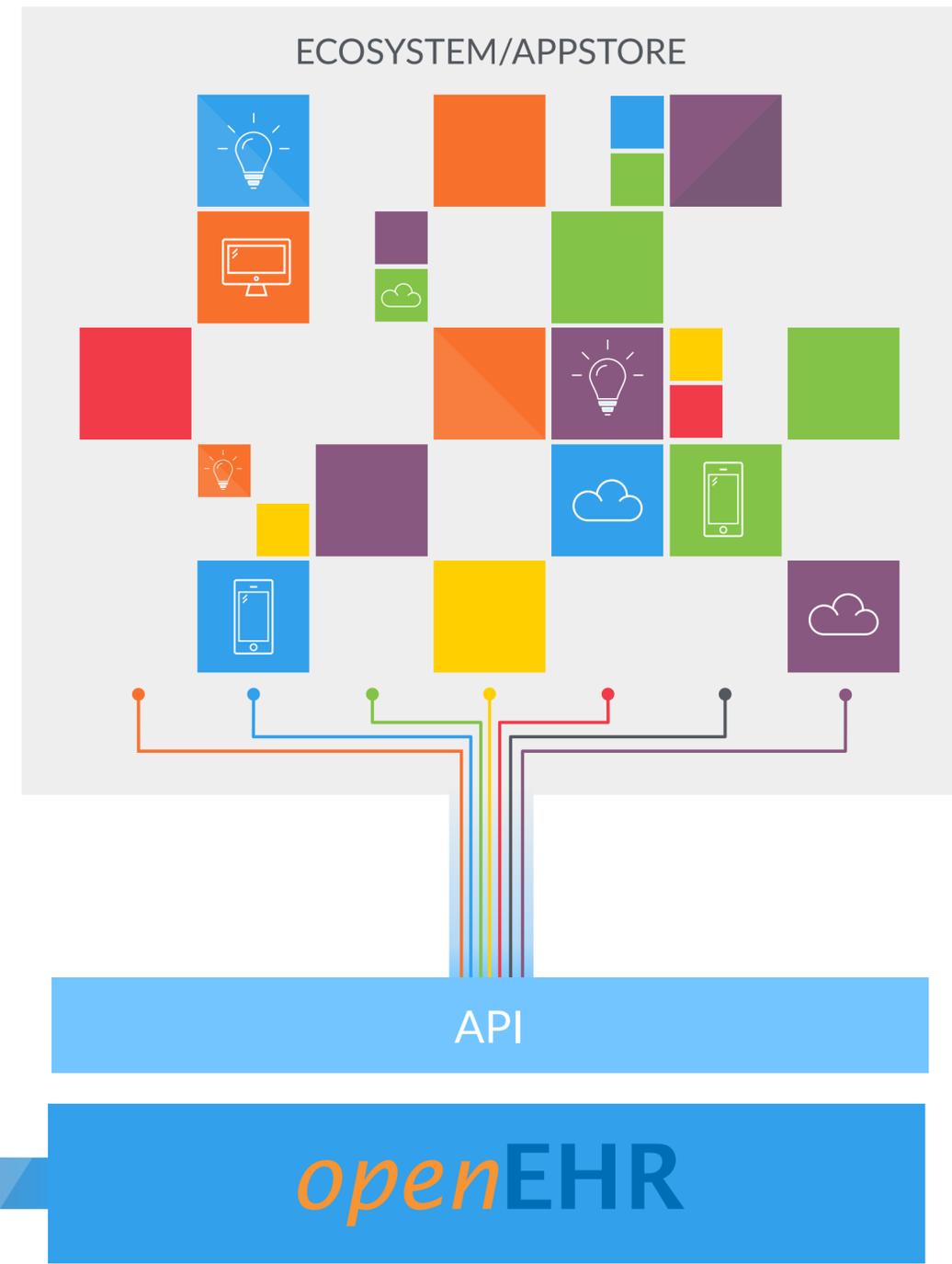
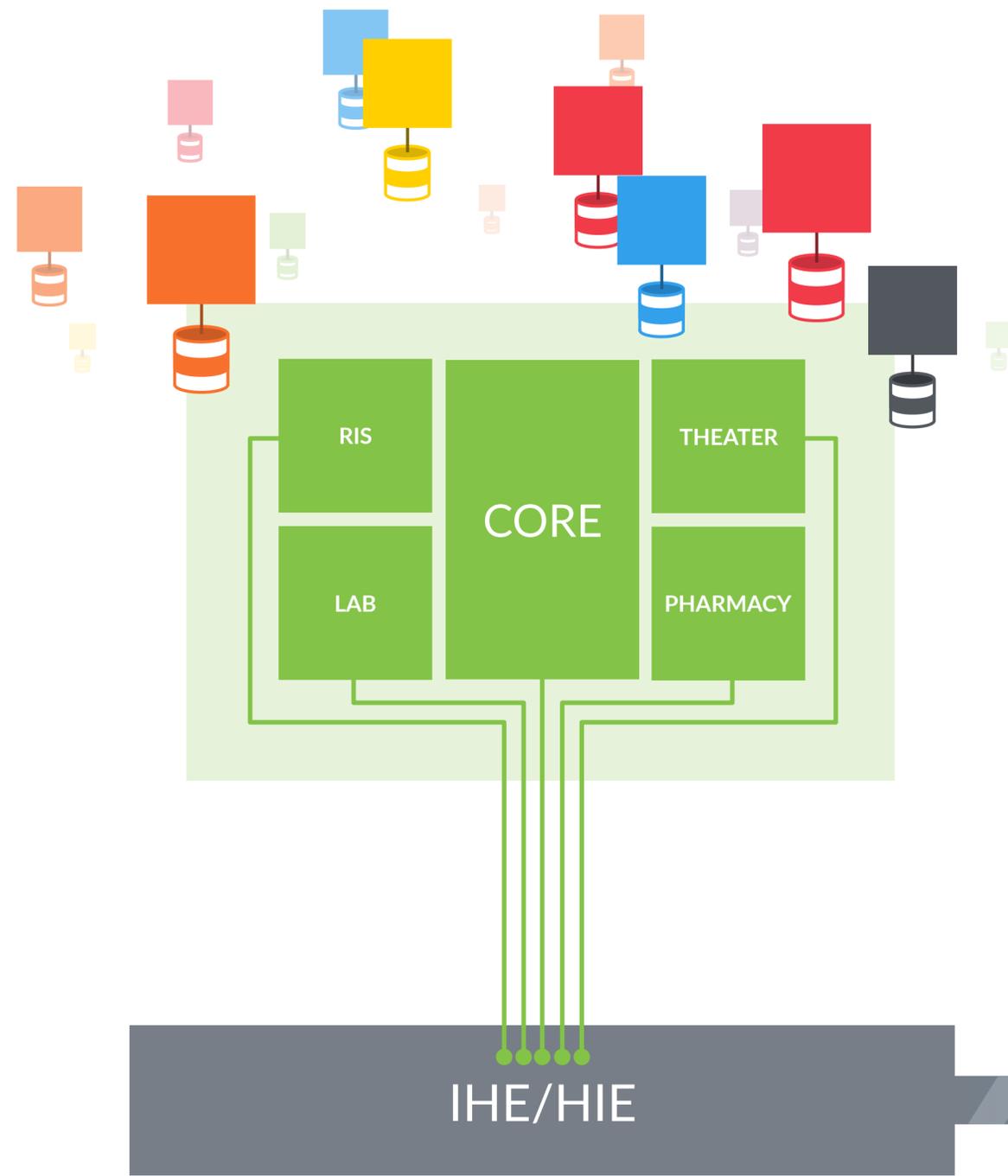




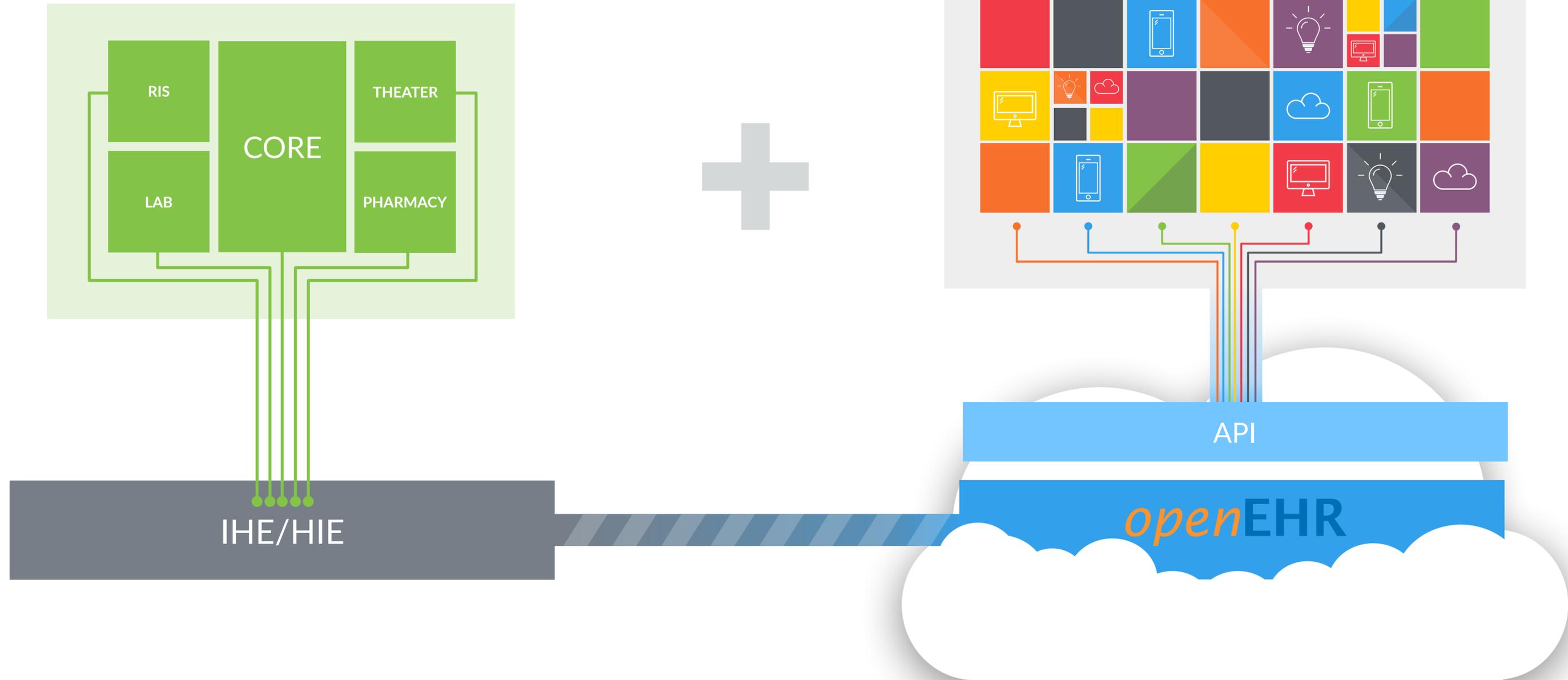








VENDOR-NEUTRAL CDR



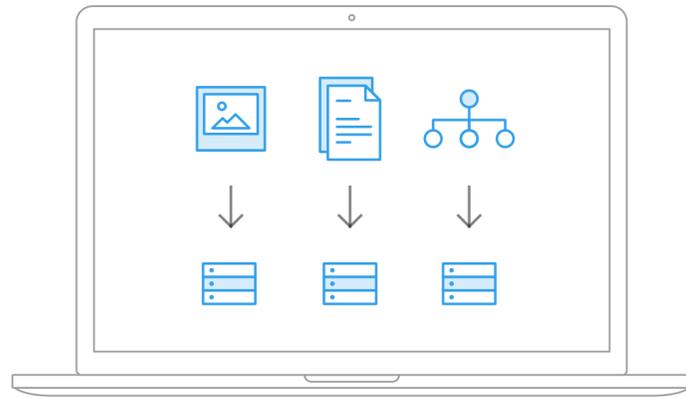
3

HEALTH DATA

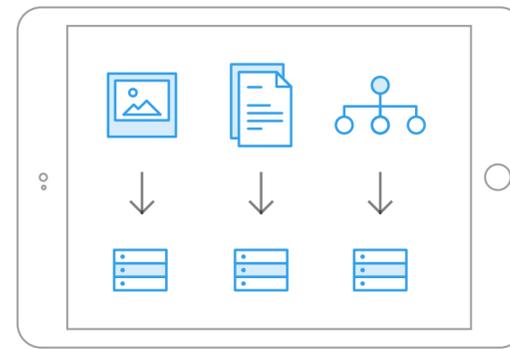
HEALTH DATA

PAST

VENDOR DEPENDENT, PROPRIETARY DATA



APPLICATION A



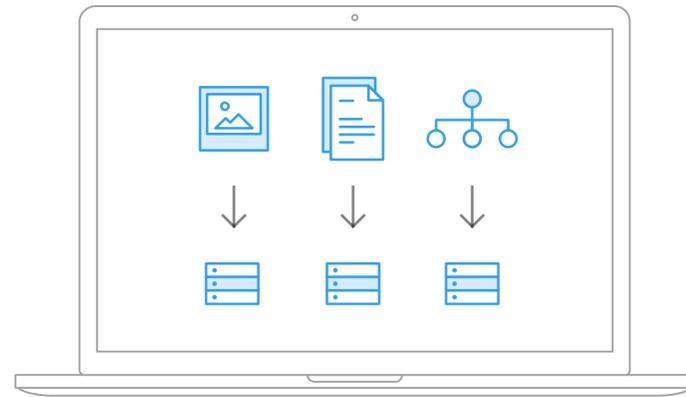
APPLICATION B



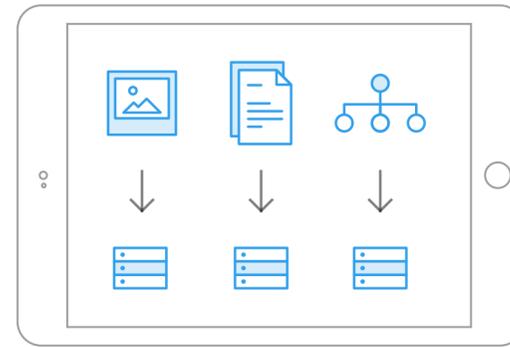
APPLICATION C

VENDOR DEPENDENT, PROPRIETARY DATA

PAST



APPLICATION A

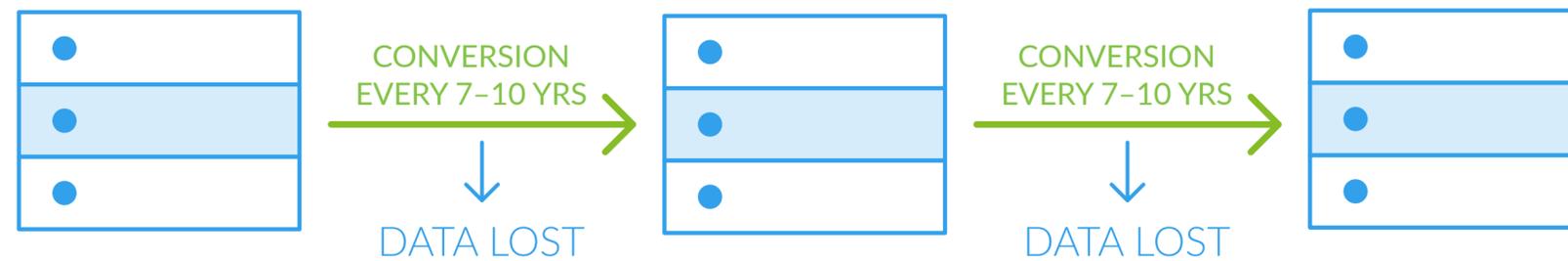


APPLICATION B



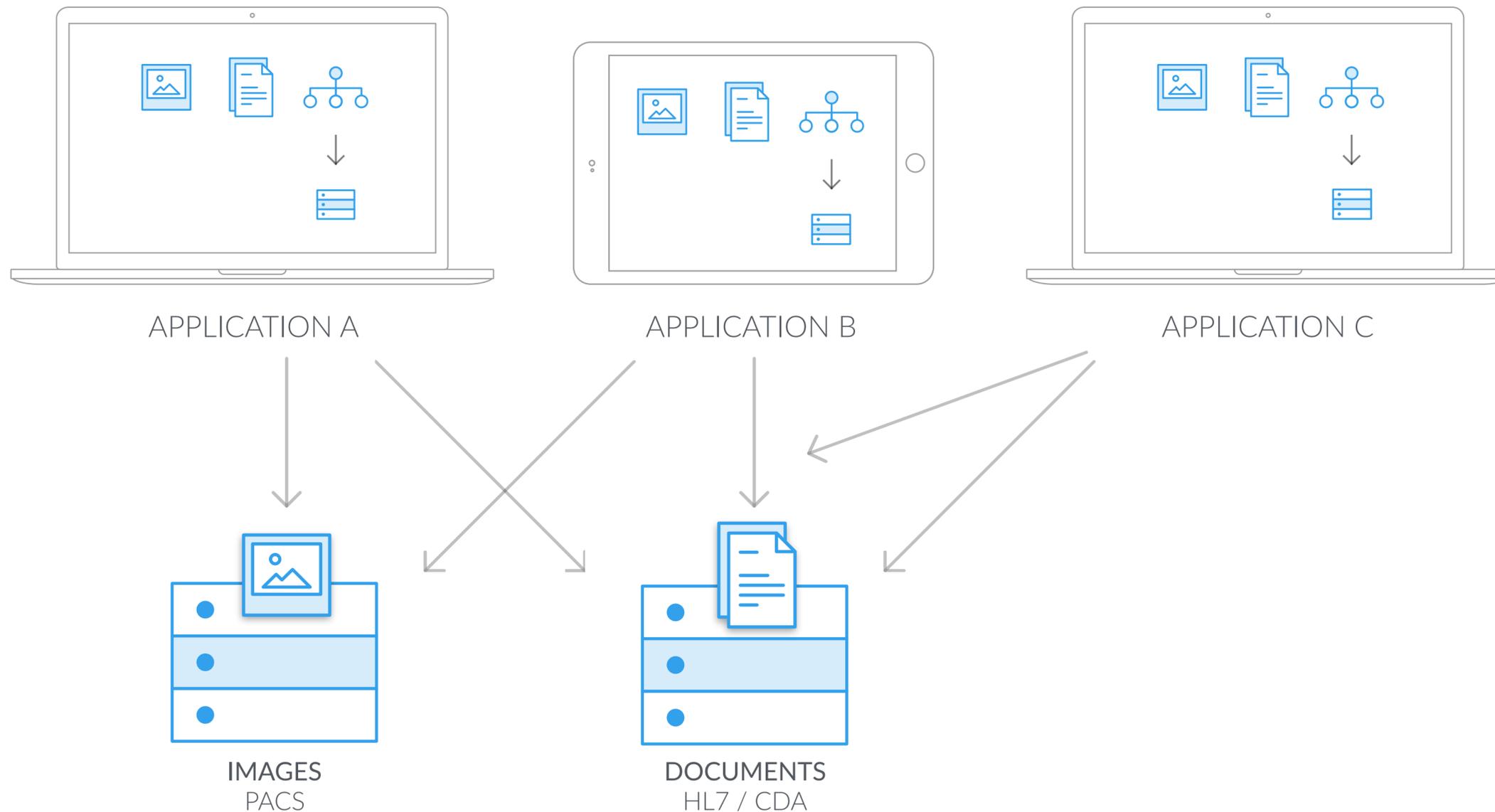
APPLICATION C

DATA MIGRATION



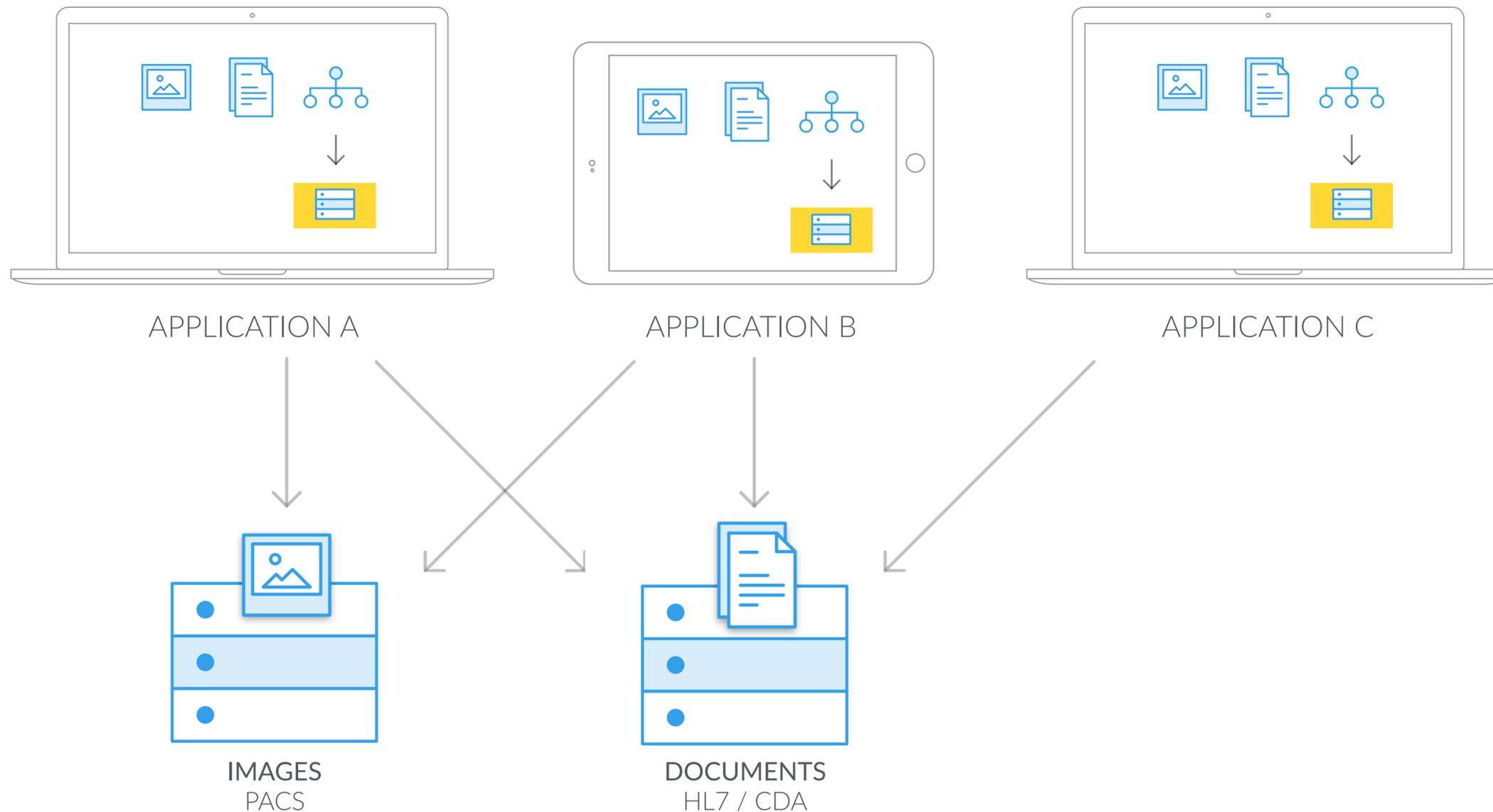
SOLVED FOR IMAGES AND DOCUMENTS

PRESENT



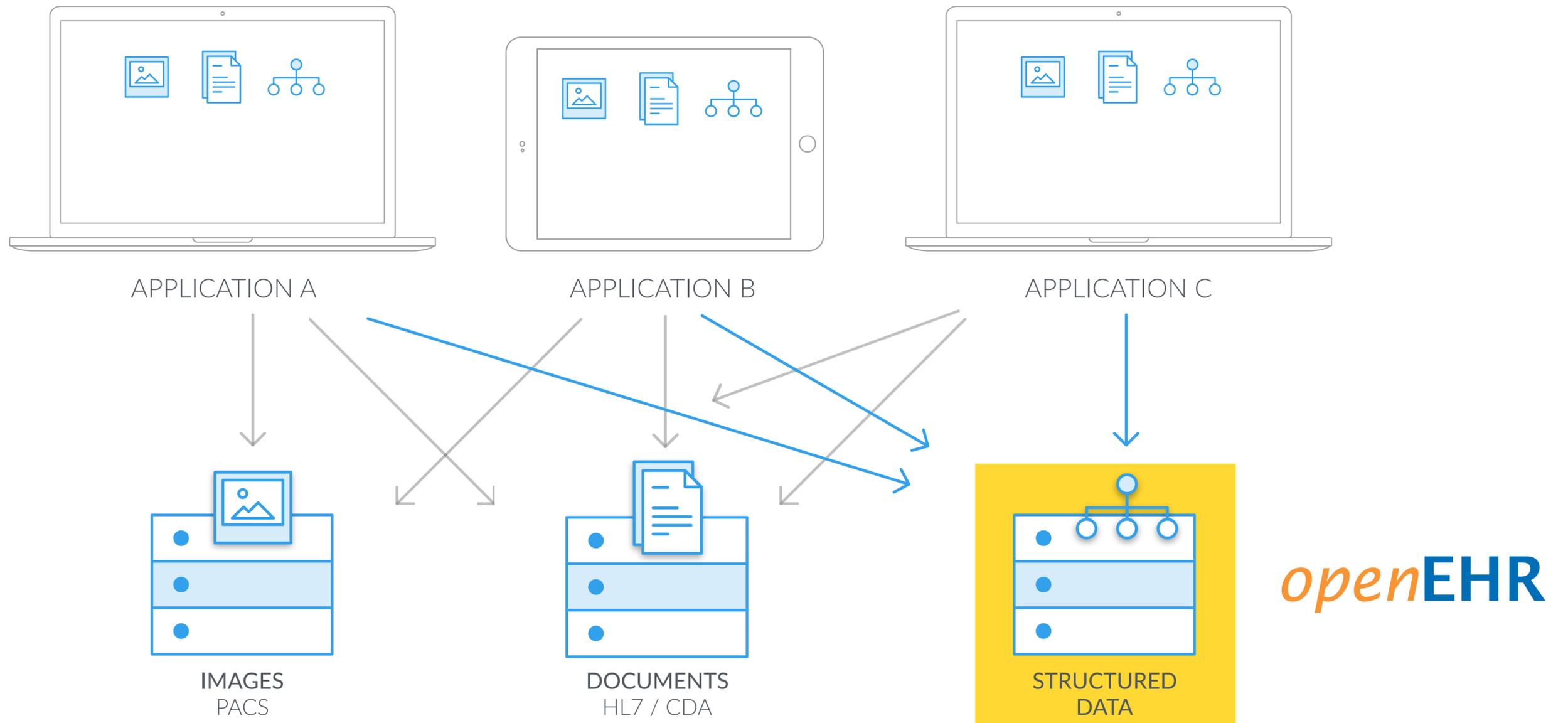
WHAT ABOUT STRUCTURED DATA?

PRESENT



VENDOR INDEPENDENT, OPEN DATA

FUTURE



*open***EHR**

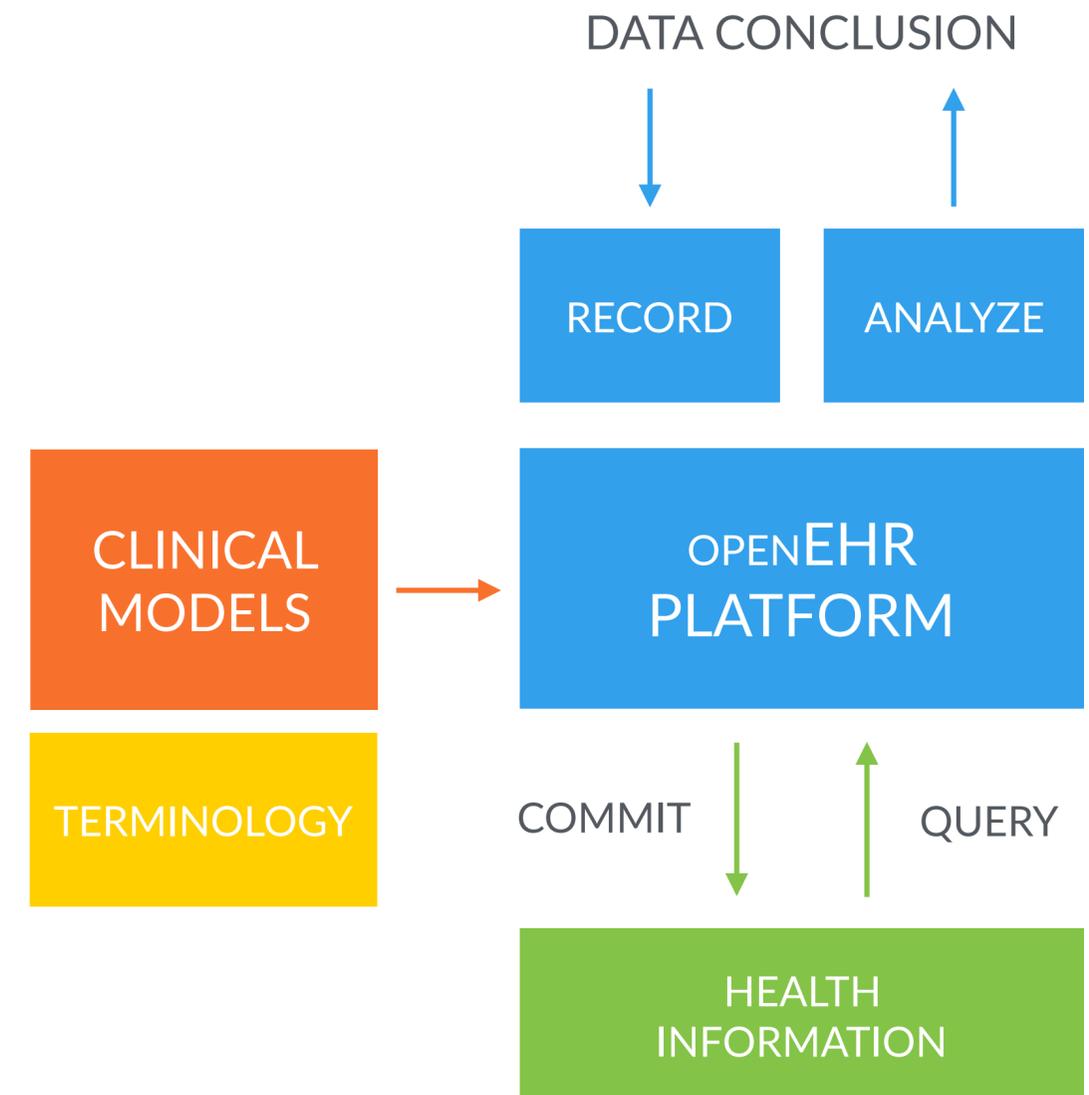
4

OPENEHR

OPENEHR

- ▶ An **open**, domain-driven **platform** for developing flexible e-health systems
- ▶ Separation of **content** and **technology**
- ▶ **Computable** data & terminologies
- ▶ Two-level **modelling**
 - ▶ Archetypes – **maximal** data set
 - ▶ Templates – data set for **use case**
- ▶ **Querying**
- ▶ Multi-lingual

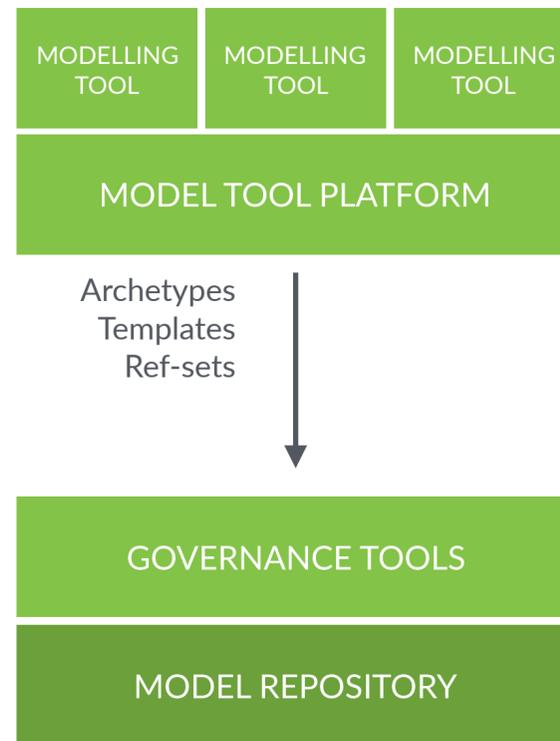
*open***EHR**



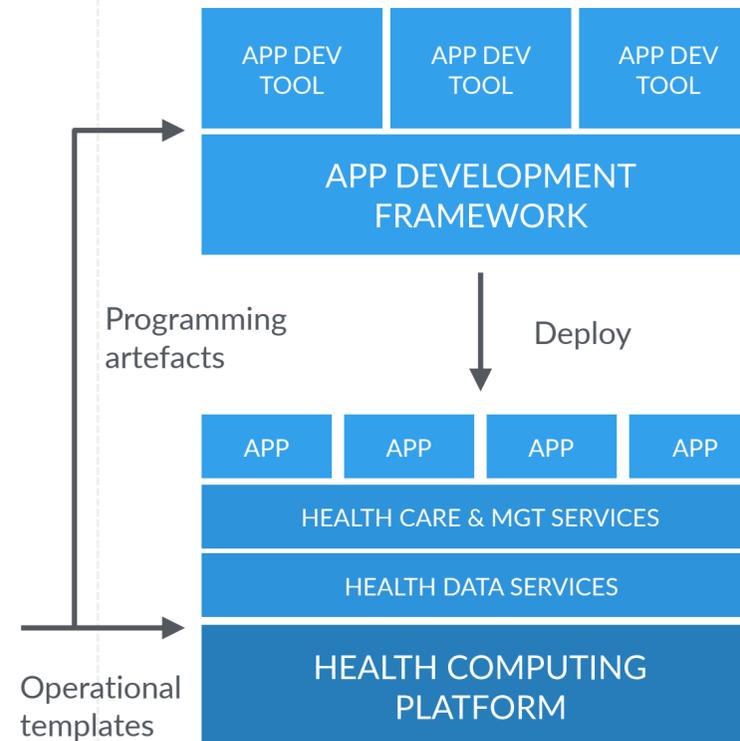
CONTENT / TECHNOLOGY



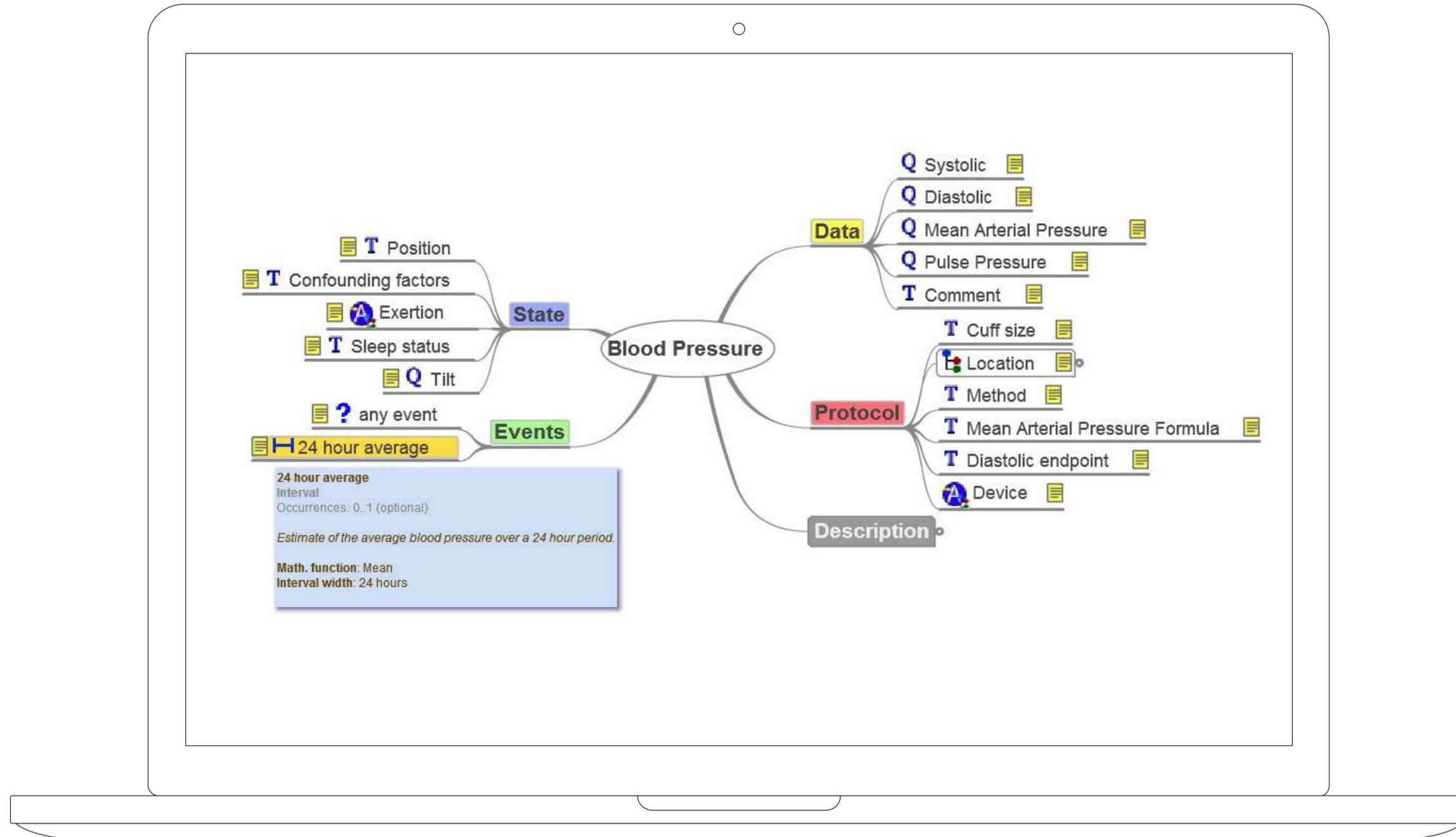
HC Professional
Domain knowledge



Software vendor
Technical knowledge

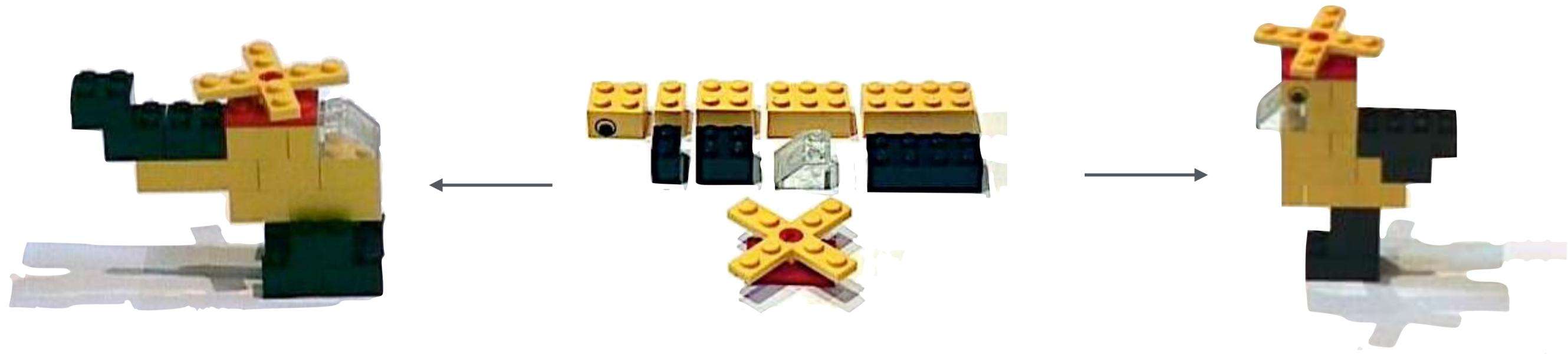


ARCHETYPES: UNIVERSAL

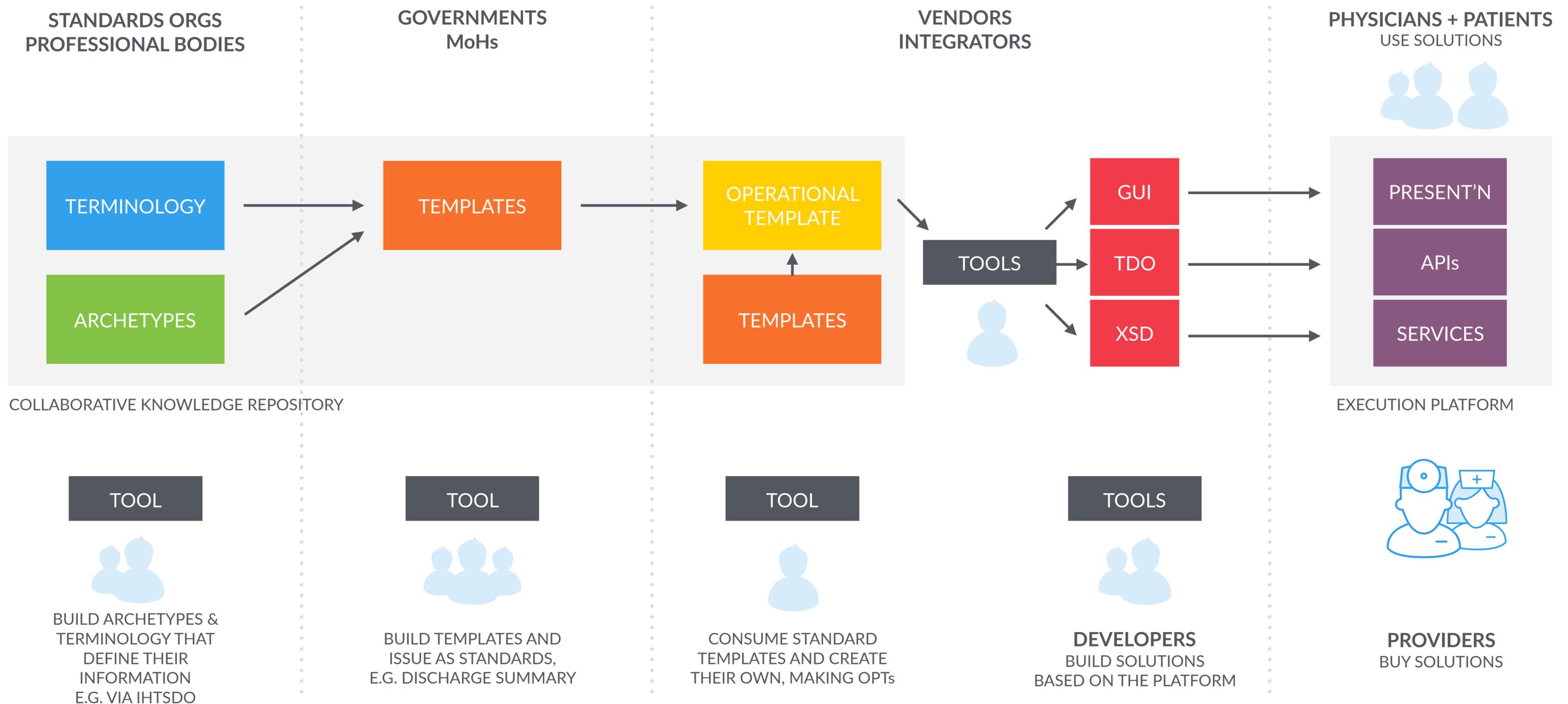


ARCHETYPES: BRICK SPECIFICATIONS

ELEMENTARY INSTRUCTIONS/DESIGNS TO CREATE MEANINGFUL STRUCTURES



KNOWLEDGE PRODUCTION ENVIRONMENT



GENOMICS ENGLAND 100,000 Genomes Project

Centralised and structured vendor-neutral Phenotype data repository

Genomics
england



Great Ormond Street
Hospital for Children **NHS**
NHS Foundation Trust

University College **NHS**
London Hospitals
NHS Foundation Trust

Moorfields Eye Hospital **NHS**
NHS Foundation Trust

Royal Free London **NHS**
NHS Foundation Trust

London North West Healthcare **NHS**
NHS Trust

Barts Health **NHS**
NHS Trust

GENOMICS ENGLAND 100,000 Genomes Project

Centralised and structured vendor-neutral Phenotype data repository

Scope:

- ▶ Sequence 100,000 genomes
- ▶ 13 regions, 6 NHS Trusts:
 - ▶ Great Ormond Street
 - ▶ UCLH
 - ▶ the Royal Free London
 - ▶ Barts Health
 - ▶ Moorfields Eye Hospital
 - ▶ London North West Healthcare
- ▶ Model and collect **278 data points** for cancer
- ▶ Model and collect **1,000 data points** for rare diseases

Challenges:

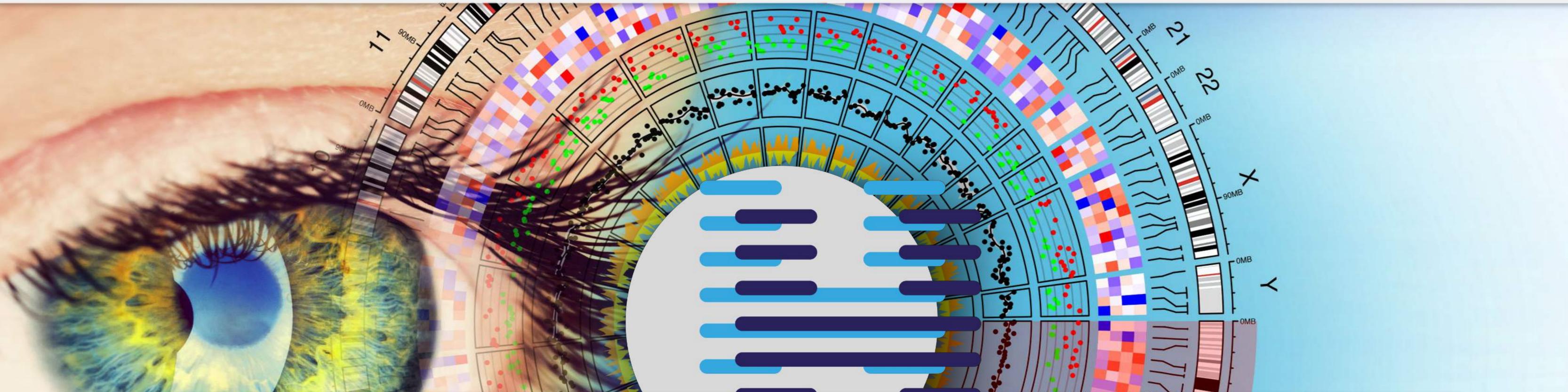
- ▶ Data sharing within and between organisations and regions
- ▶ Accelerate scientific progress and support the focused, interdisciplinary collaboration
- ▶ Combine clinical and whole genome sequencing data in rare disease, cancer, and infection
- ▶ UK as the **first country in the world** to sequence 100,000 whole genomes

Solutions:

- ▶ Marand **Think!EHR Platform™** deployed as a structured and standards based clinical data repository to store Phenotype data

Benefits:

- ▶ Integration of systems, phenotype and genomics data
- ▶ Easy access to all phenotype data
- ▶ Improved research capabilities through powerful querying and analysis of normalised data
- ▶ Centralised, structured and technology and vendor-neutral clinical data repository



To create Medical Data Integration Centers (MeDICs) based on a **generic and scalable platform architecture** for integrating data from care, research, and external sources, which will facilitate the development of new solutions for medical data analytics benefitting clinicians, patients and researchers

HIGHMED CONSORTIUM

Göttingen
Universitätsmedizin Göttingen

Hannover
Medizinische Hochschule Hannover

Heidelberg
Ruprecht-Karls-Universität Heidelberg
Universitätsklinikum Heidelberg
Deutsches Krebsforschungszentrum (DKFZ)



Berlin
Robert Koch-Institut

Berlin
Ada Health GmbH

Braunschweig
Helmholtz-Zentrum für Infektionsforschung GmbH

Braunschweig
Technische Universität Braunschweig

Darmstadt
Technische Universität Darmstadt

Erlangen
Siemens Healthcare GmbH

Hannover
Hochschule Hannover

Heidelberg
NEC Europe Laboratories

Heilbronn
Hochschule Heilbronn

Hildesheim
Hochschule für angewandte Wissenschaft und Kunst (HAWK)

Ismaning
Sana Kliniken AG

Potsdam
Hasso-Plattner-Institut für Softwaresystemtechnik GmbH

Walldorf
InterComponentWare AG

Walldorf
SAP SE

GEFÖRDERT VOM



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REQUIREMENTS

- **Gain a holistic view on patients' disease progresses and outcomes**
- **Cross-Enterprise Data Analysis**
- **Cross-Enterprise Knowledge Management**

GEFÖRDERT VOM



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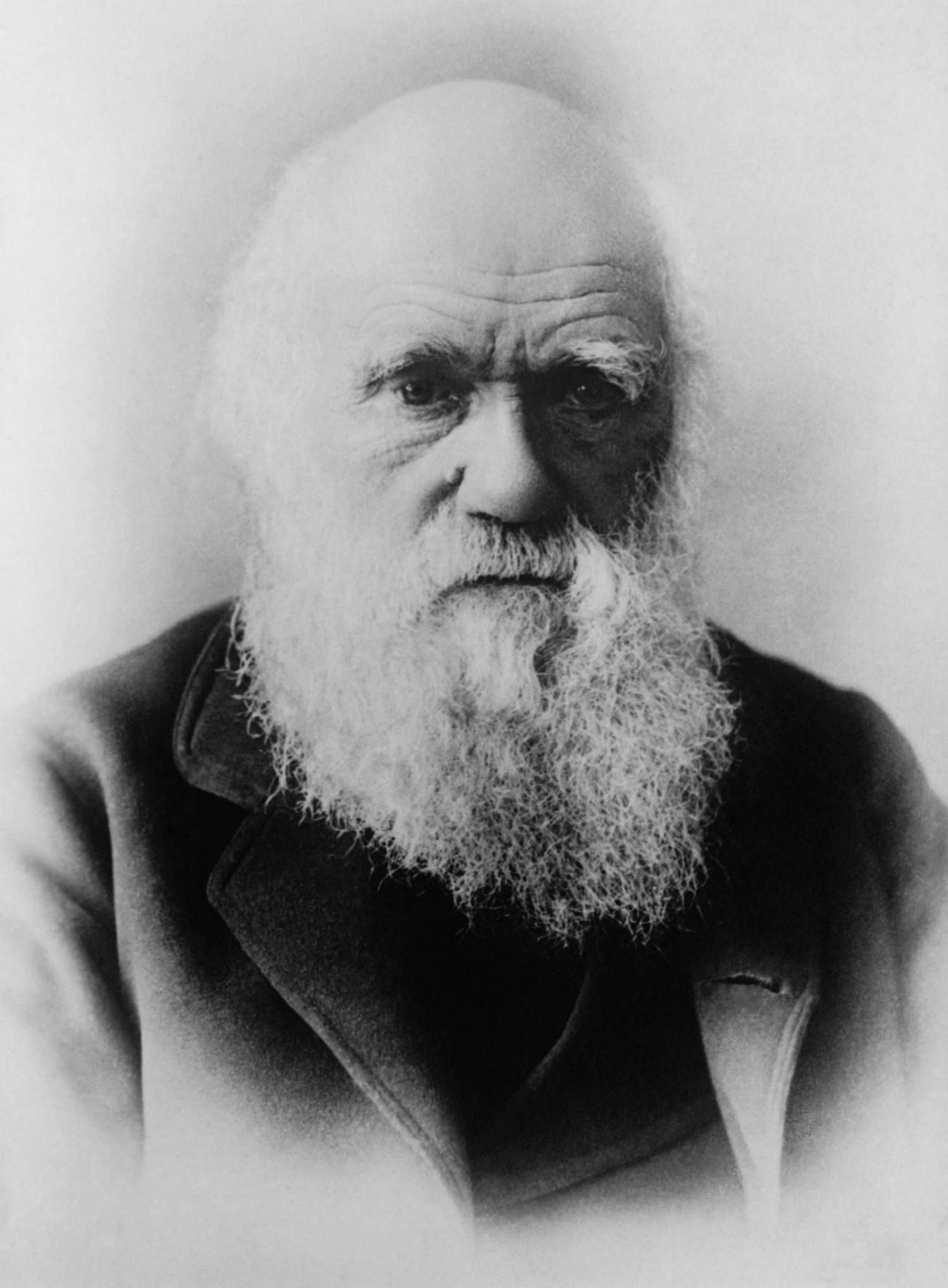
BASIC PRINCIPLES

- **Data Safety and Privacy**
- **Clinical Relevance**
- **Clinically led Data Modelling**
- **Semantic Traceability**

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“It is not the strongest or the most intelligent who will survive but those who can best manage change.”

– Charles Darwin

CONTACT

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 www.marand.com