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Data for life

Separating data from applications

Anze Droljc
anze.droljc@better.care
https://www.linkedin.com/in/anzedroljc/

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Healthcare needs data

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Care is shifting from hospitals to **communities** and **the home**

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Citizens want to be **more engaged** in **managing** their health and wellness, demanding **full access** to **their health record**

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Care is shifting from hospitals to **communities** and **the home**

Citizens want to be **more engaged** in **managing** their health and wellness, demanding **full access** to **their health record**

COVID-19 has **accelerated innovation** and **new models** of care **delivery**

better

"The **dissatisfaction** with **monolithic EHR** systems and their **inability to quickly respond** and support new clinical and regulatory **requirements** has never been more **obvious**."

- Gartner Group

Hype Cycle for Real-Time Health System Technologies, July 2020

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Healthcare needs data

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"We have been **struggling** to make **data follow the patient for 25 years!**

Interoperability is not working!

We need a **fundamentally different approach**."

- Jordi Piera Jimenez

Director of the Digital Health Strategy Office
at Catalan Health Service

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”At the moment most live patient data is **held by the companies** who provide the electronic patient record systems.
But **it isn’t ‘their’ data**. And although isn’t ‘their’ data, too often these systems act as a barrier to accessing it. And it means the **data might not be accessible** and can’t be properly shared, providing a **barrier to** the research – **innovation**”

- Matt Hancock

Secretary of State for Health and Social Care
Rewired, March 18th 2021

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”I want to explore whether we can remove this **barrier to innovation** and **separate the data layer** from the **application layer** so providers can offer the **application software** and the **data will be stored separately** and securely in the cloud, then we have a **consistent data platform across the NHS**.”

- Matt Hancock

Secretary of State for Health and Social Care

Rewired, March 18th 2021

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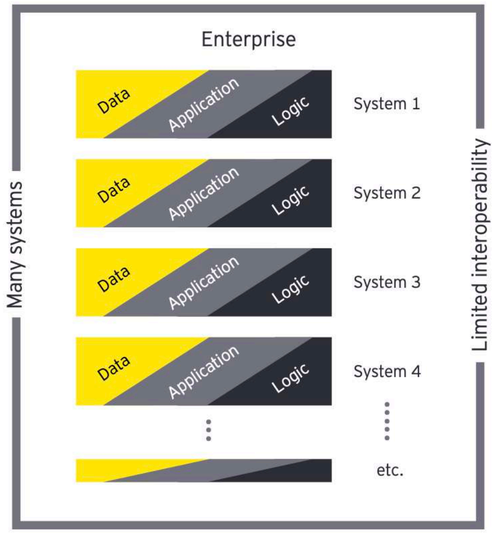
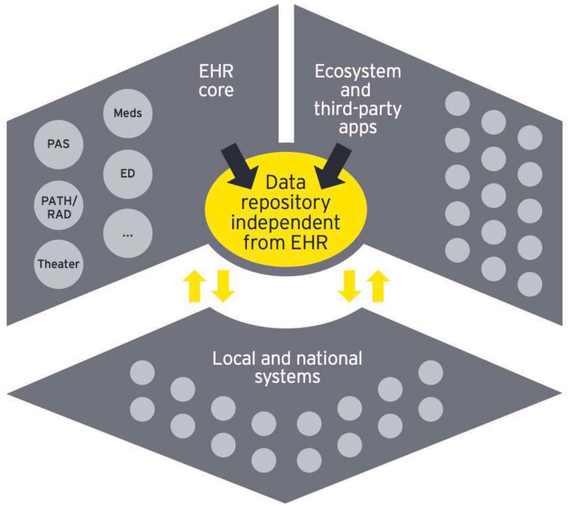
“For health care organizations, the shift in the **ecosystem** will likely look something like this:

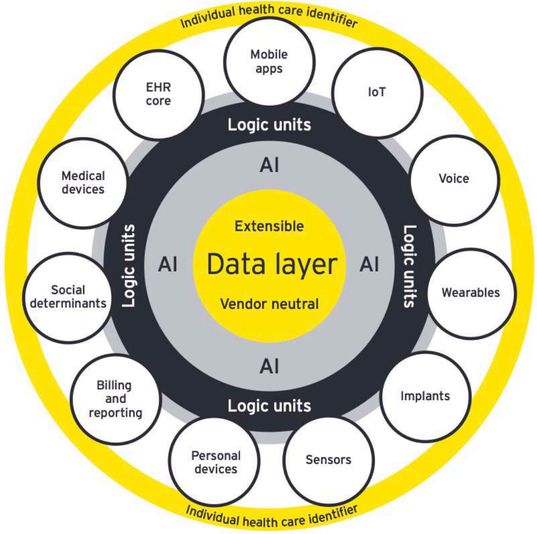
an **open platform** and a **clinical data repository**, with integration of legacy and third-party elements, that support easy **data migration** and are **transparent** to **all applications** connected to the platform.”

EY

ition towards the health platform enabling the health ecosystems of the future







Present-day enterprise systems

Many systems all with intimately bound data logic and applications. Within one enterprise, 200–400 systems can exist made up of several different vendors (many of which are not complementary) and where logic is bundled with the application.

Intermediate-state platform

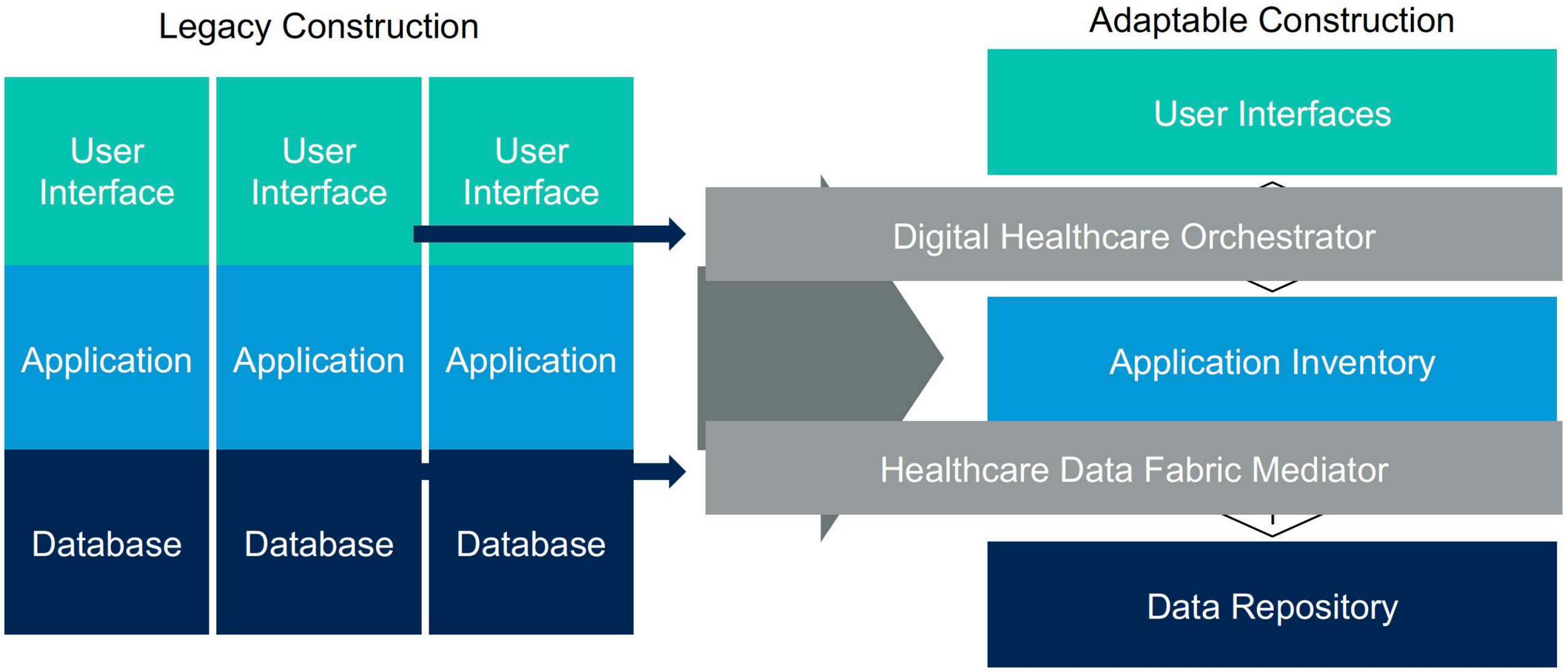
A more flexible, dynamic infrastructure will be built around existing systems, communicating through modern APIs. In the near term, platform-based systems and legacy EHRs will coexist by maintaining basic functionality in legacy systems while building and innovating in a platform-based environment.

Future-state platform

A cohesive technology stack, giving a unified experience for patients, professionals and consumers; unique data at the center accessed by applications in real time by microsystems.

Today → **1 year** → **2+ years**

The Target Architecture Is Clear Enough



Building the Digital Health Platform for Provider CIOs, October 2020

Gartner

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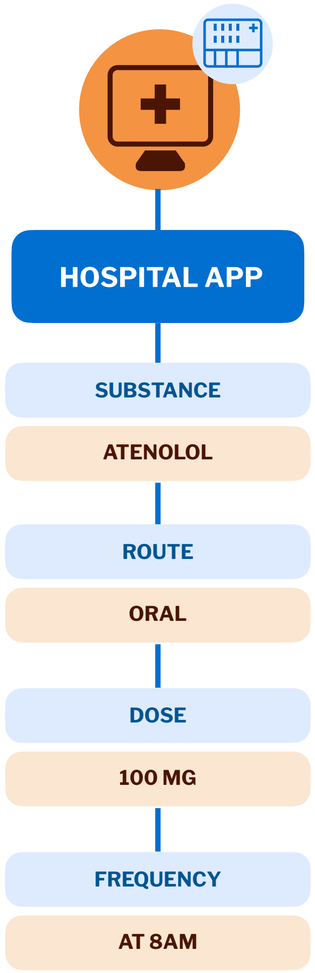
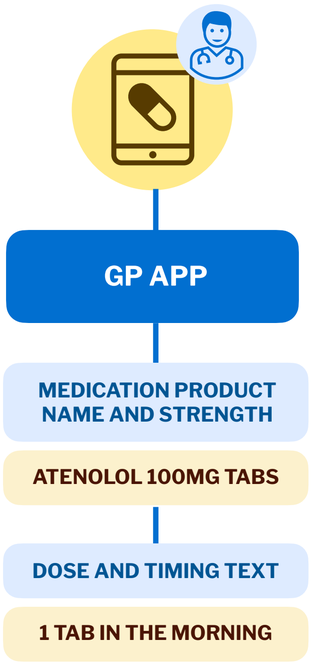
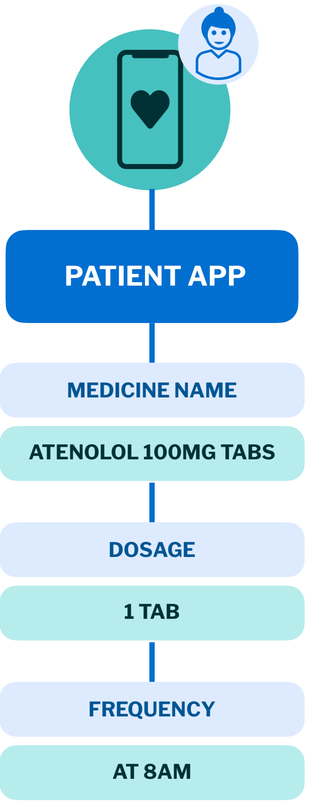
Each application stores data differently

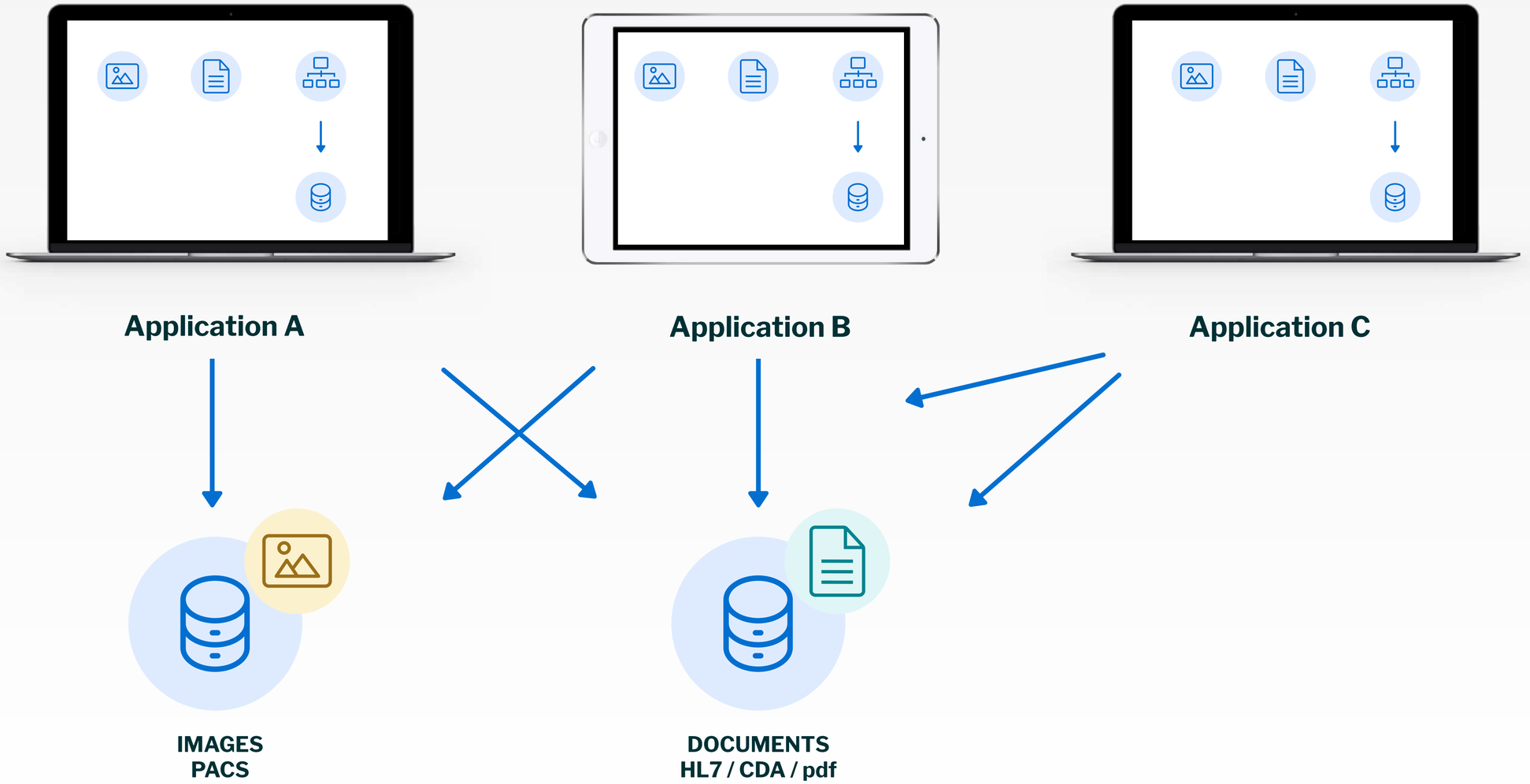






Health & Care Data

Present : solved for images and documents



Health & Care Data

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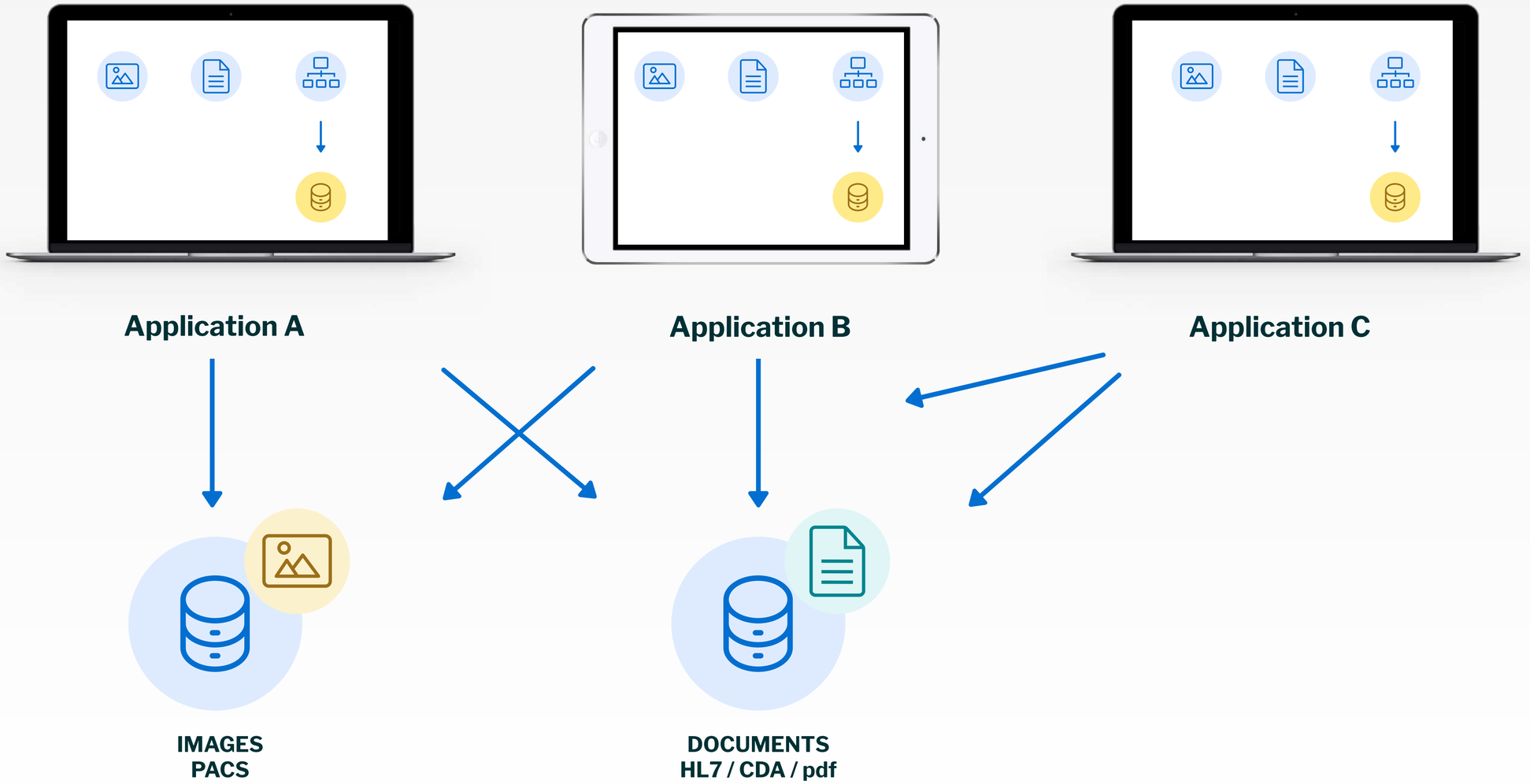
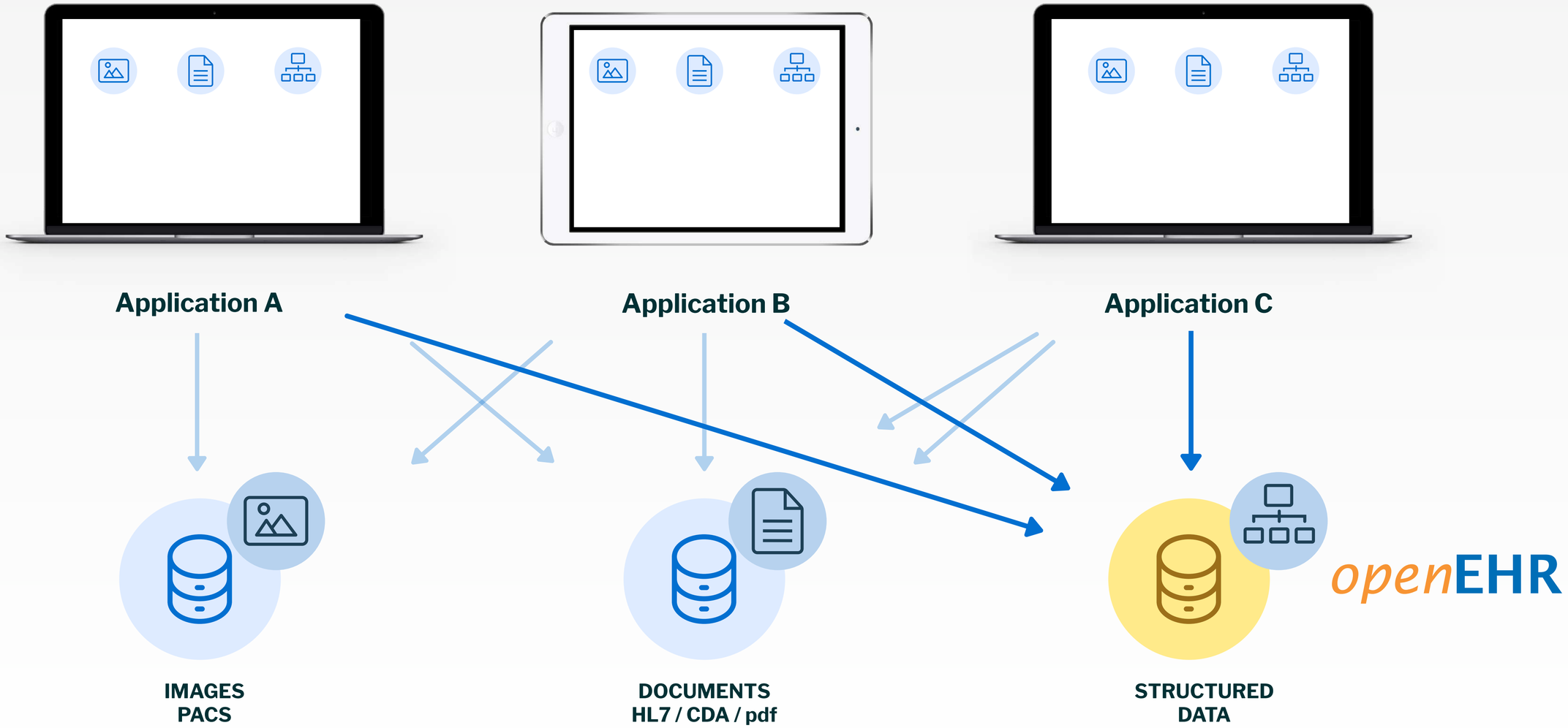


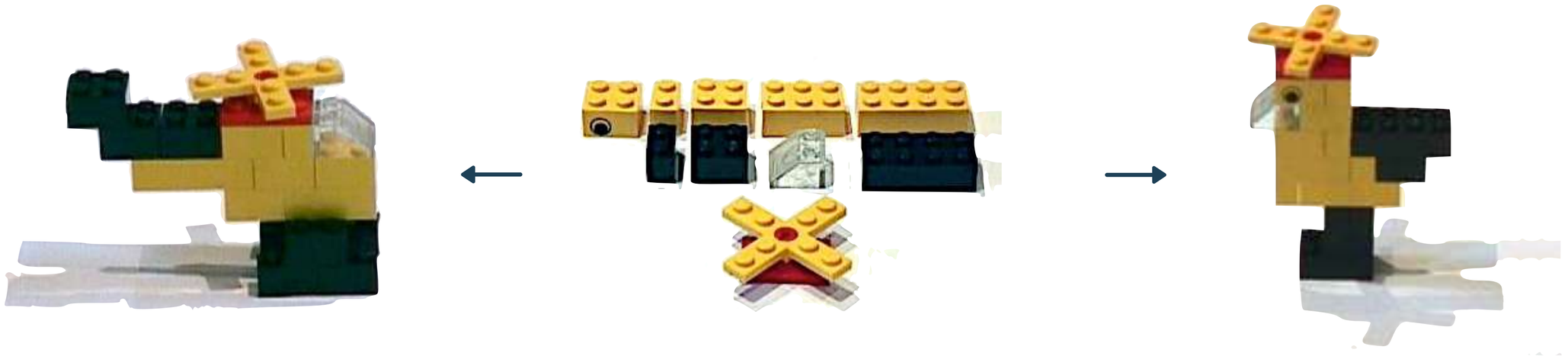
Health & Care Data

Future: vendor independent, open data



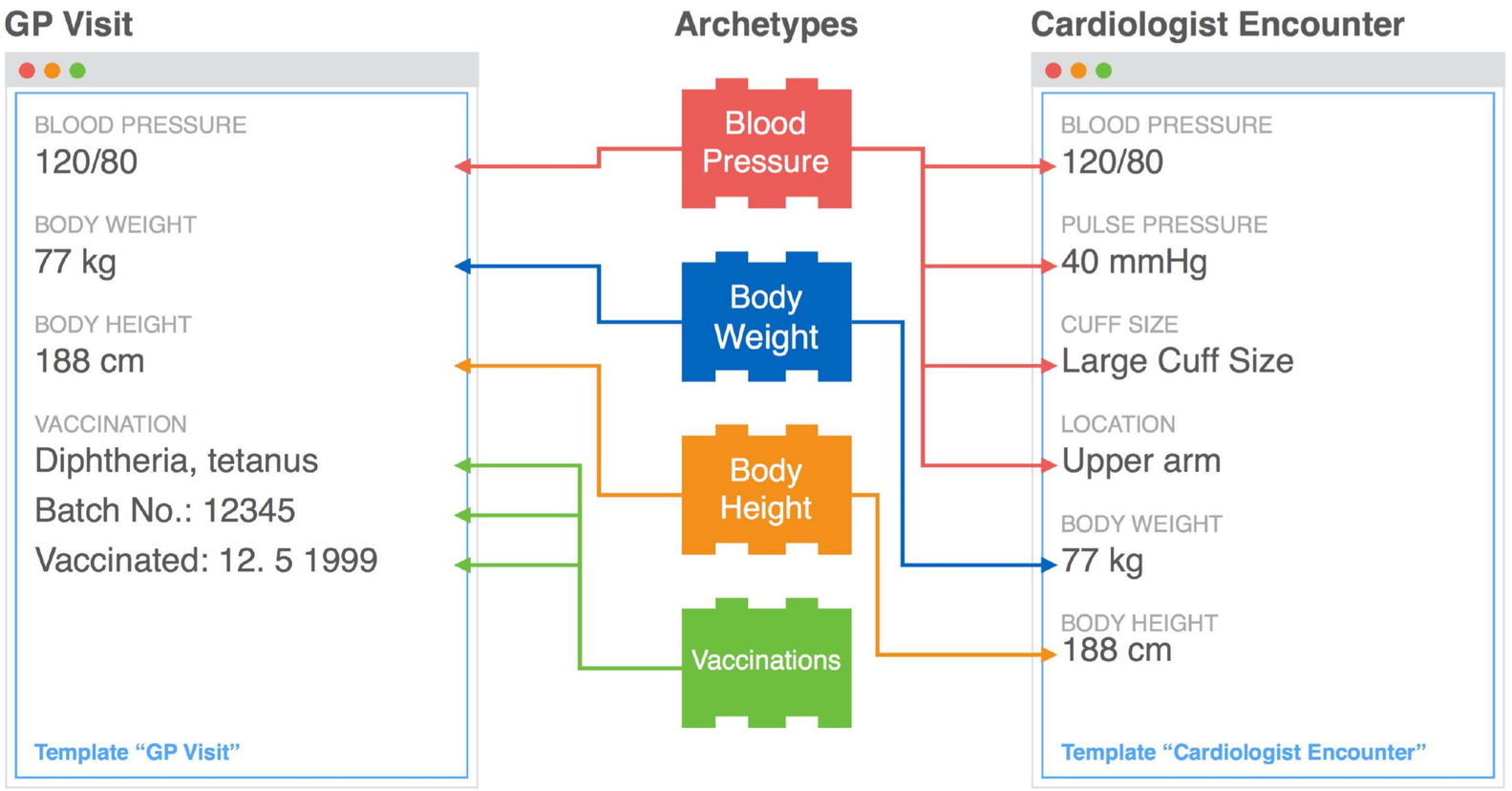
Archetypes: Brick Specifications

Elementary instructions/designs to create meaningful structures



Templates: Use Case Specific

Customize the data model for the form, report or message



openEHR

An **open**, domain-driven **platform** for developing flexible e-health systems

Separation of **content** and **technology**

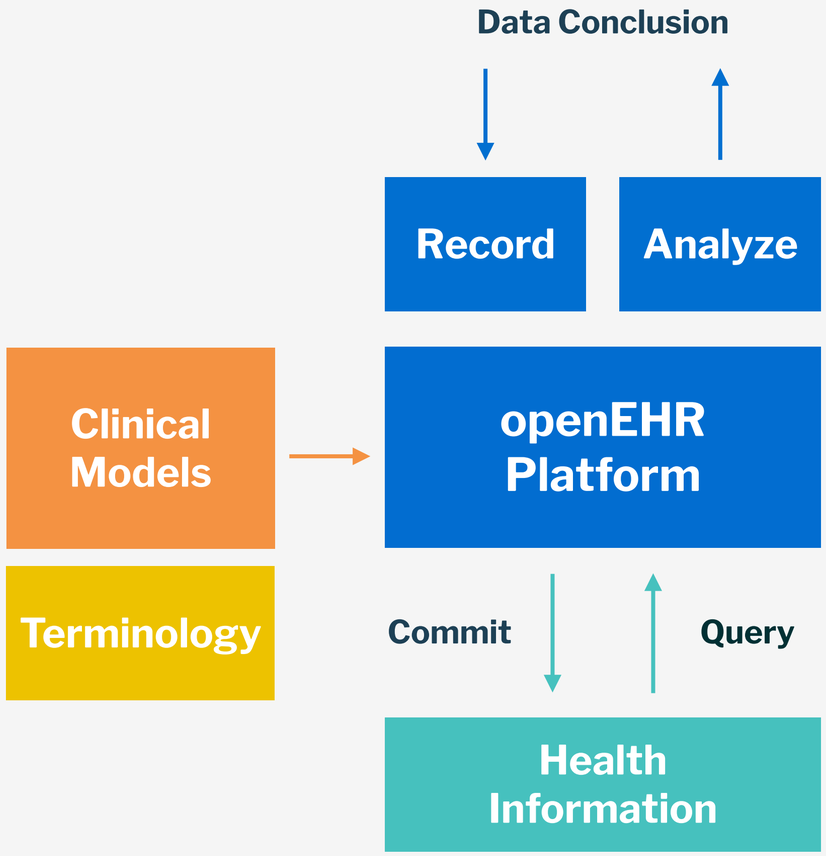
Computable data & terminologies

Two-level **modelling**

- Archetypes – **maximal** data set
- Templates - data set for **use case**

Querying

Multi-lingual



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openEHR global community:

101 countries

1,500+ clinicians

1,050 clinical models

openEHR

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Digital health platform

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By 2023, the number of active citizen developers at large enterprises will be at least four times the number of professional developers.

Top 10 Application Predictions Through 2025, May 2020

Gartner

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By 2023, 40% of professional workers will orchestrate their business application experiences and capabilities like they do their music streaming experience.

Top 10 Application Predictions Through 2025, May 2020

Gartner

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By 2023, 40% of professional workers will orchestrate their business application experiences and capabilities like they do their music streaming experience.

Recommendations:

Reject any new monolithic solutions, sold or proposed in-house. Plan to renovate or replace the old ones and begin to move to **assembled application experiences** based on packaged business capabilities.

Take an outside-in view of customer/employee needs by using **design thinking** to discover role-centric business practices and their required application experience.

Top 10 Application Predictions Through 2025, May 2020

Gartner

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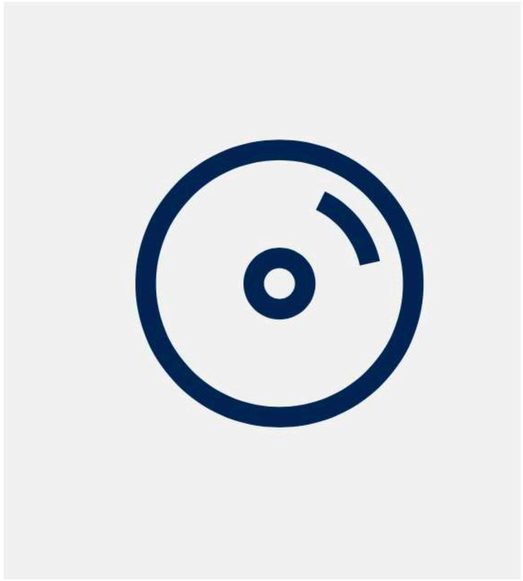
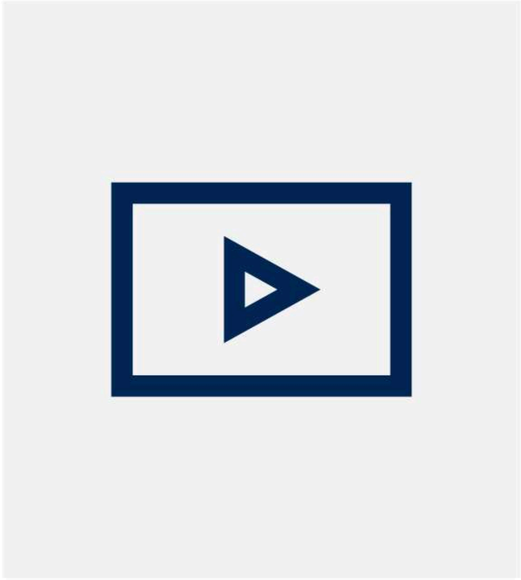
Consumer Experience: We All Have Been There



Vinyl: All or Nothing

Mix Tapes: For the Well-Equipped



Playlists: Active Personalization

Gartner

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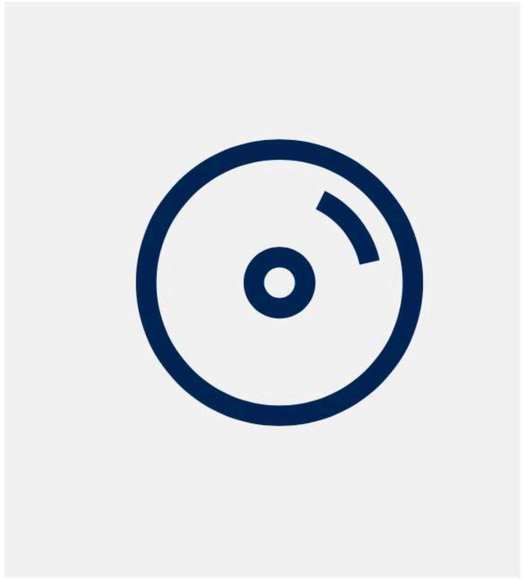
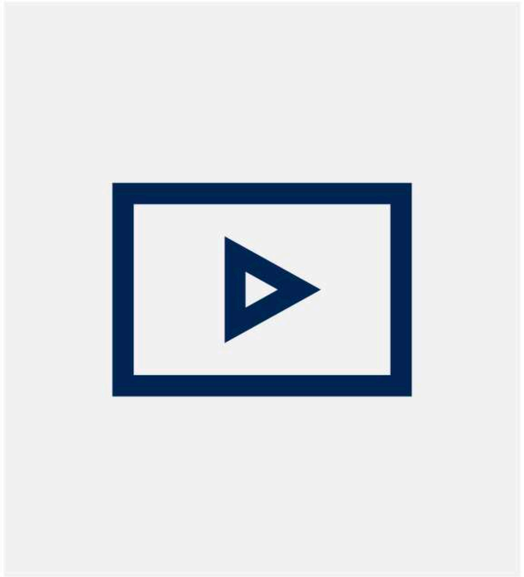
Consumer Experience: We All Have Been There



Monolithic Applications:
All or Nothing

Application Integration:
For the Well-Equipped



Composable Enterprise:
Active Personalization

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Monolithic Applications:
All or Nothing

Application Integration:
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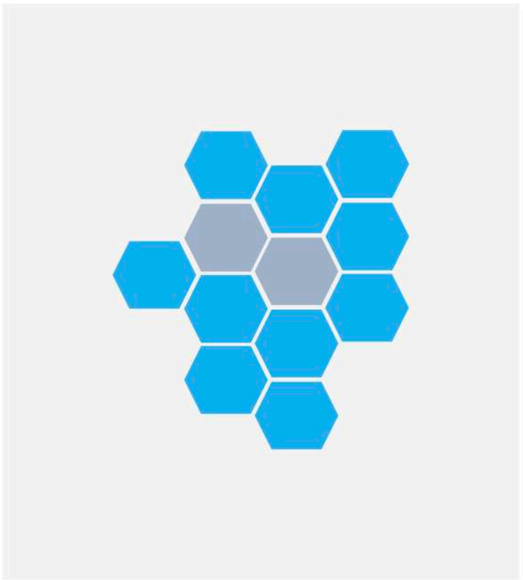

Composable Enterprise:
Active Personalization

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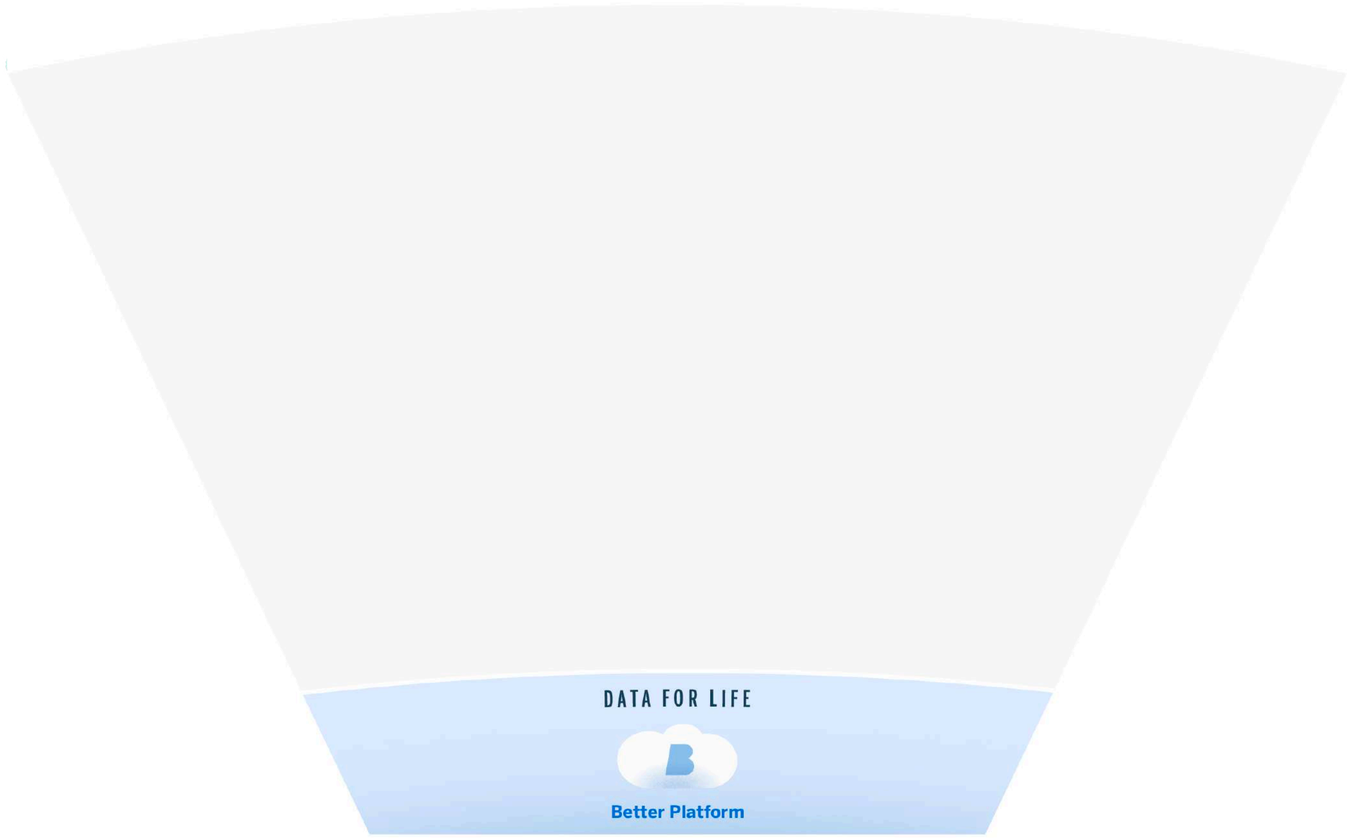
Digital Health Platform

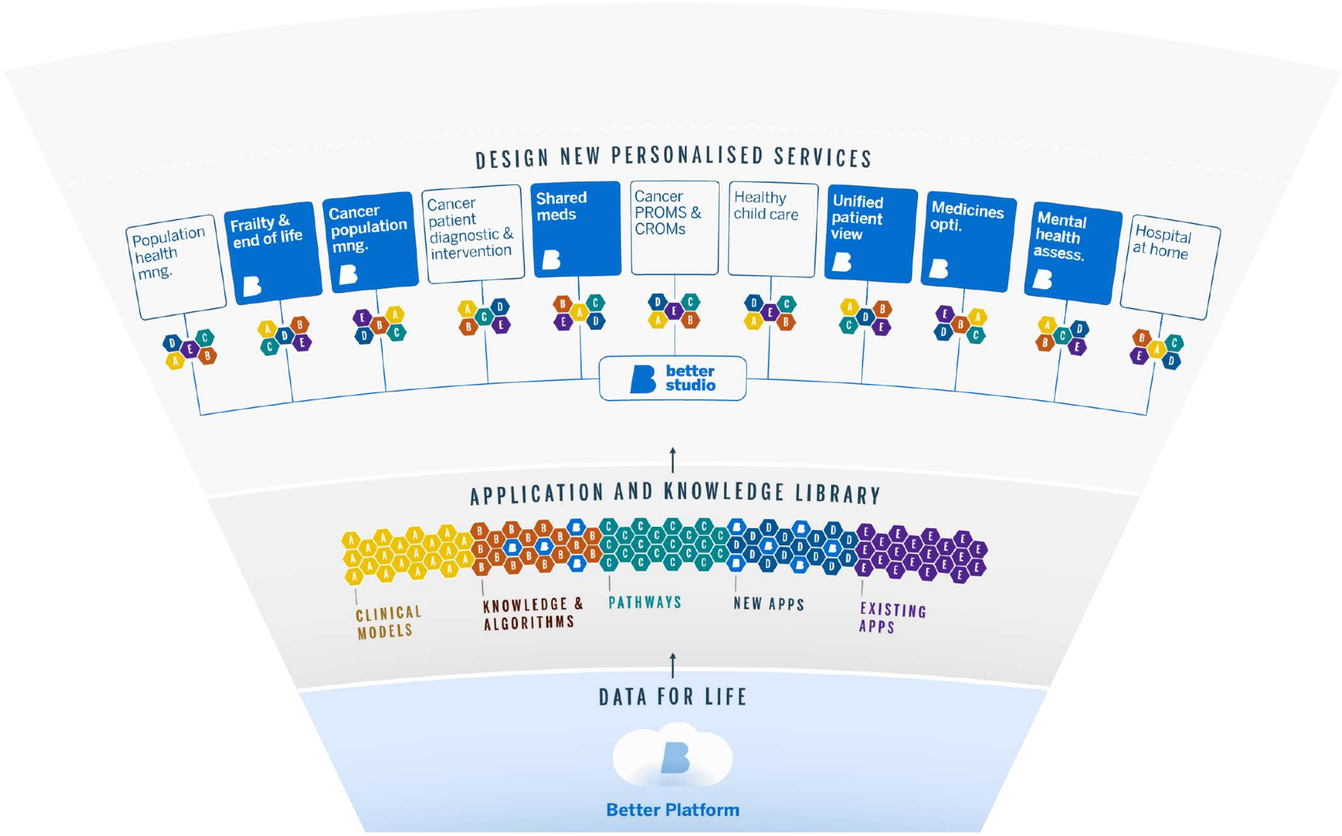
Unified care record built around the patient, not institution:
“one patient, one record”



Digital Health Platform

Governance of data models
Choice of apps, vendors

Unified care record built around the patient, not institution:
“one patient, one record”

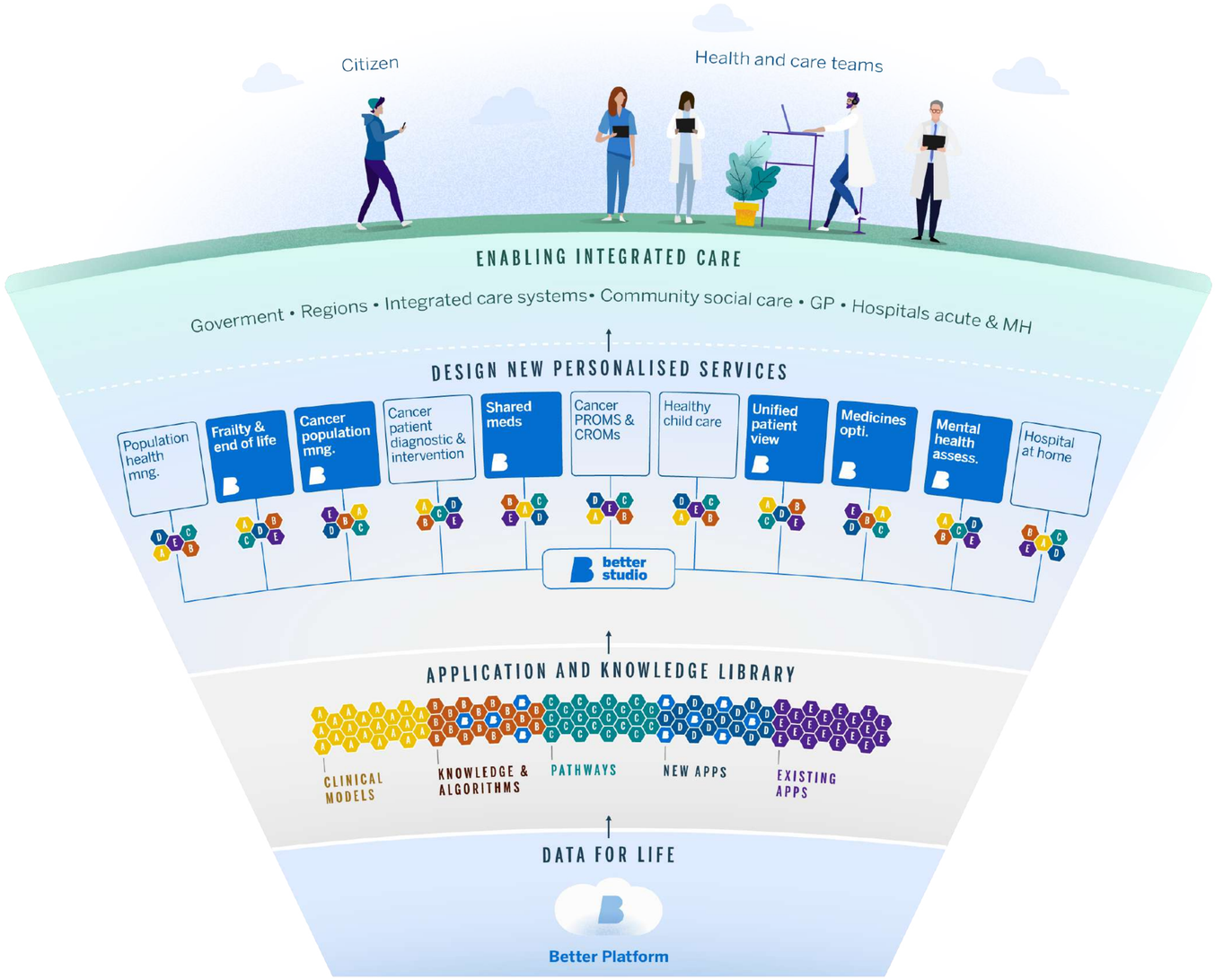


Digital Health Platform

Ecosystem of apps, built once to support **new models of care**

Governance of data models
Choice of apps, vendors

Unified care record built around the patient, not institution:
“one patient, one record”



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How to start?

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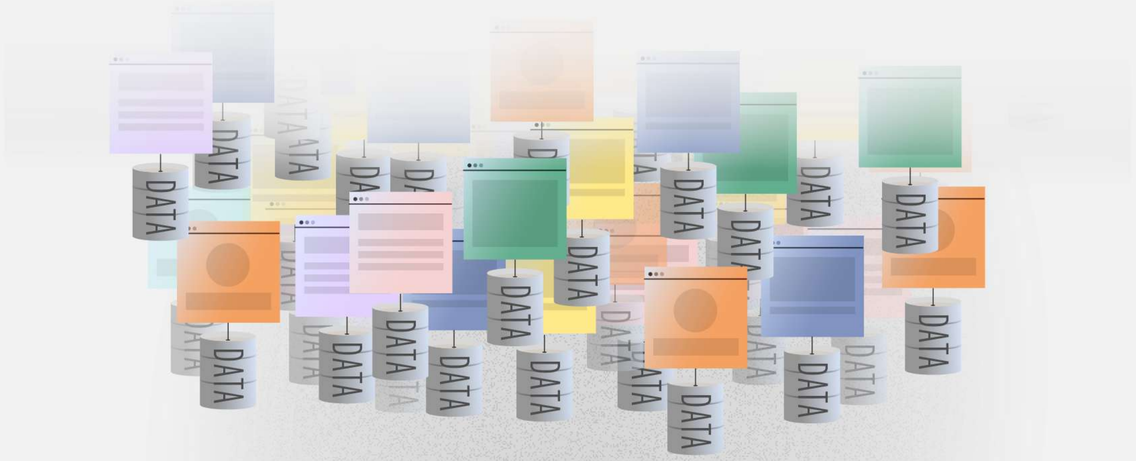

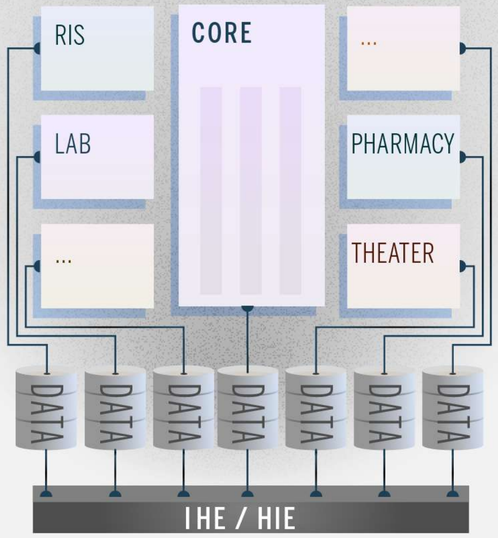

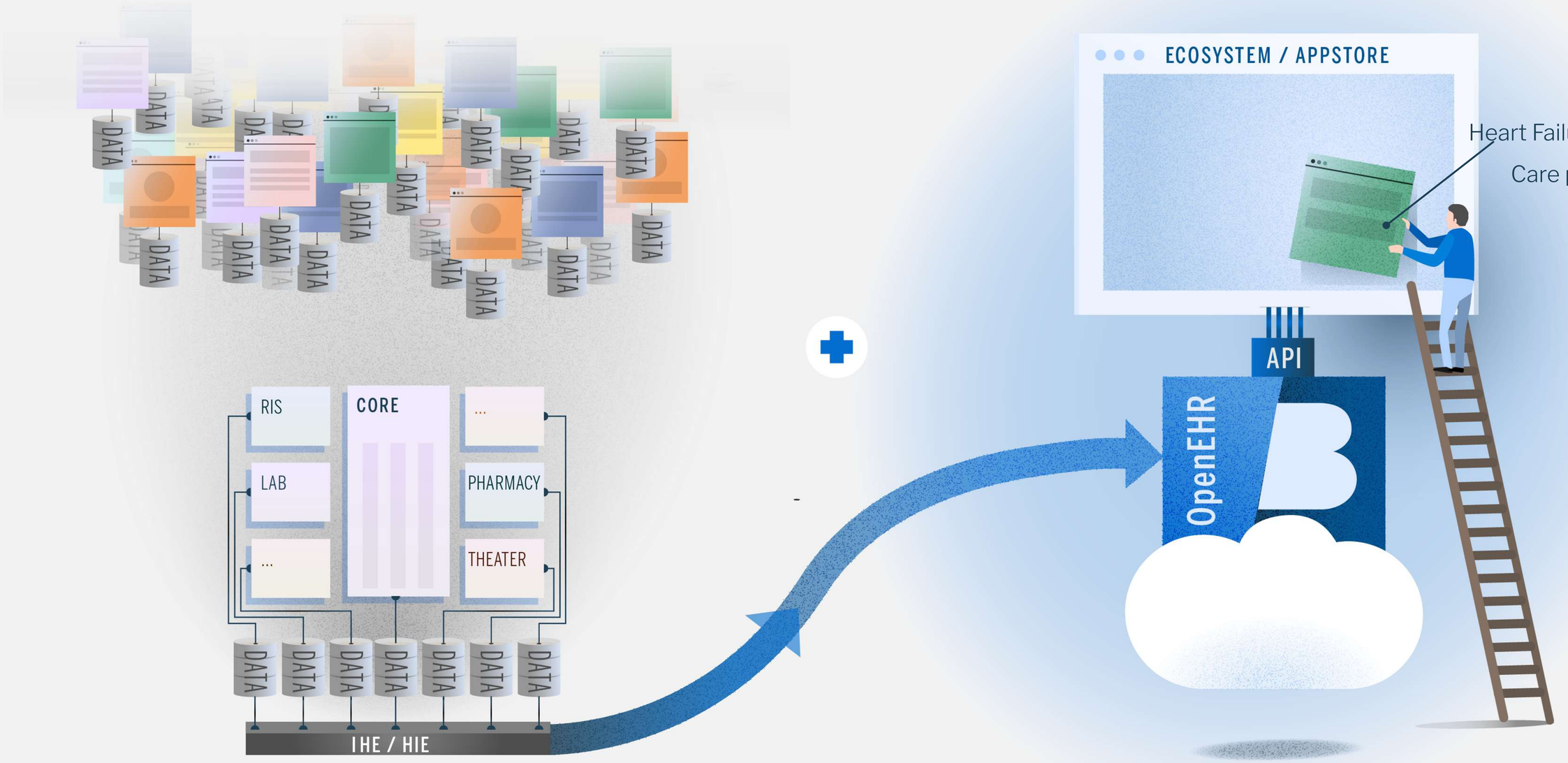
DATA
RIS
CORE
...
LAB
PHARMACY
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THEATER
IHE / HIE
ECOSYSTEM / APPSTORE
Heart Failure Dynamic
Care planning
API
OpenEHR

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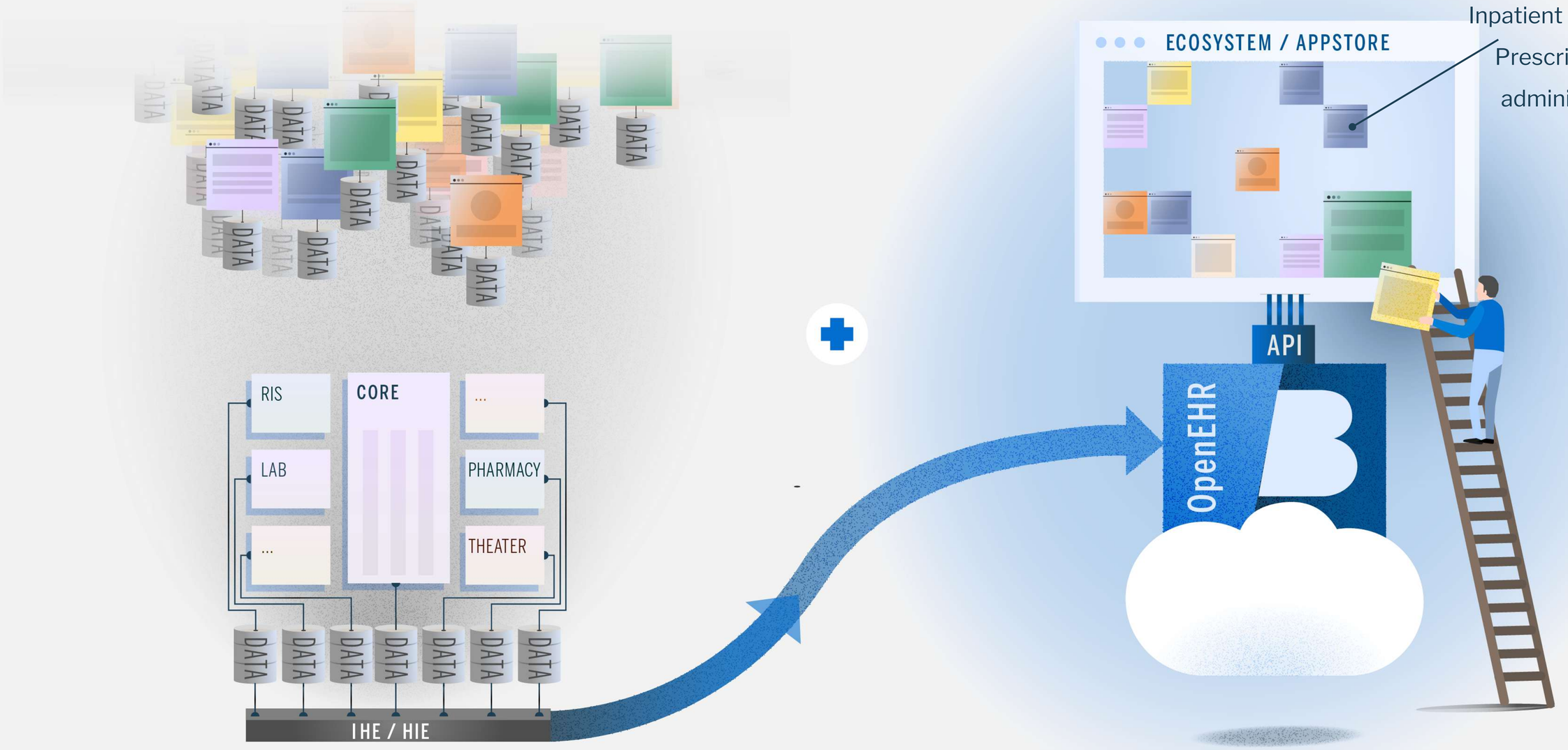
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Inpatient Medication
Prescribing and
administration
API
OpenEHR
RIS
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THEATER
DATA
IHE / HIE

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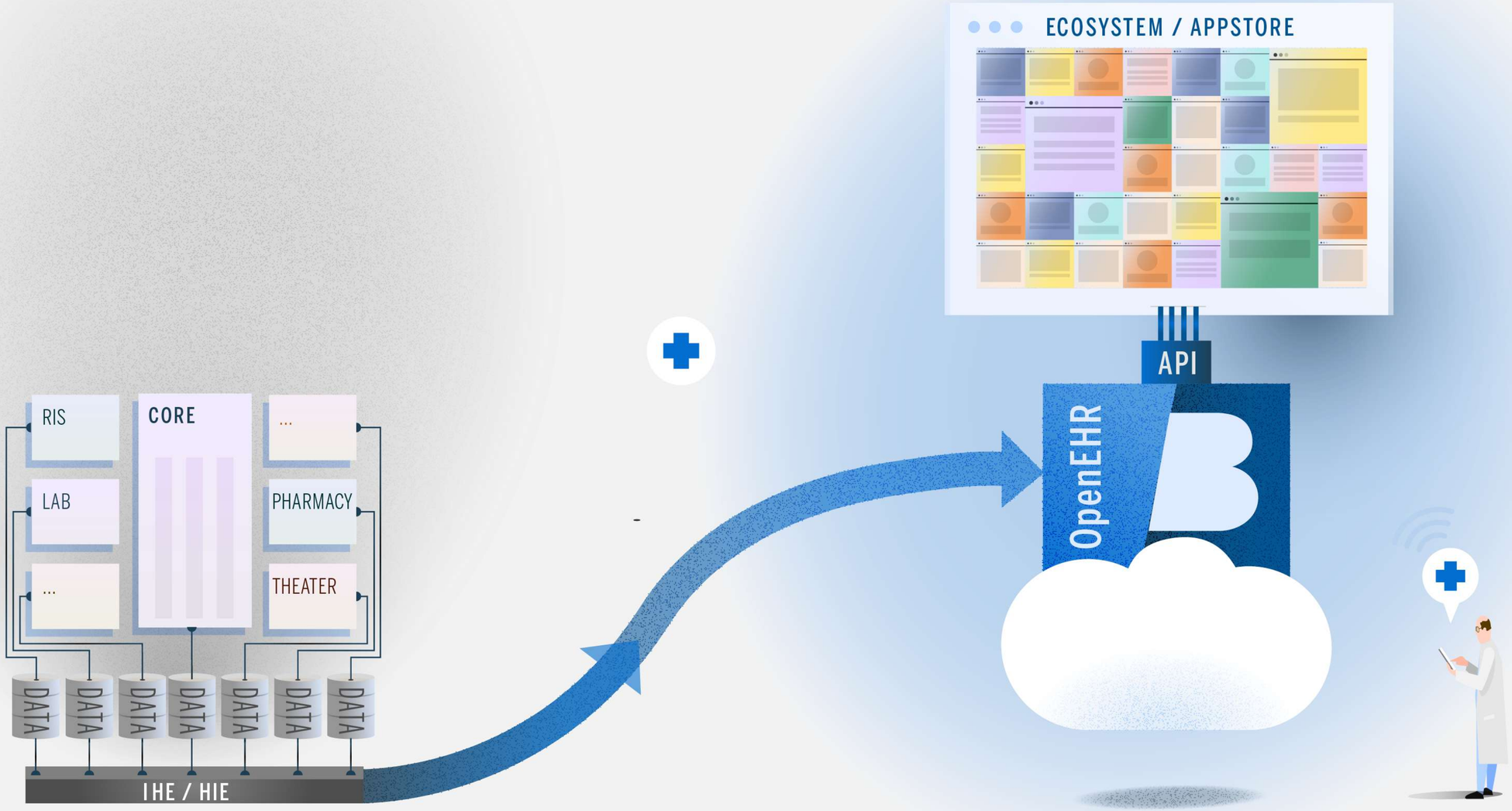
Postmodern EHR



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Towards Integrated care systems

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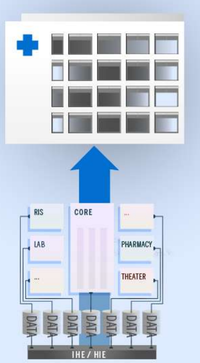
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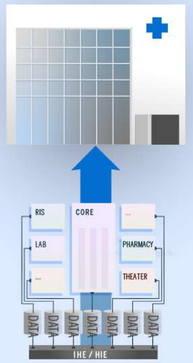
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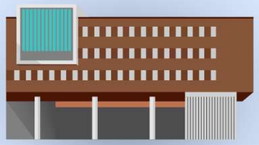

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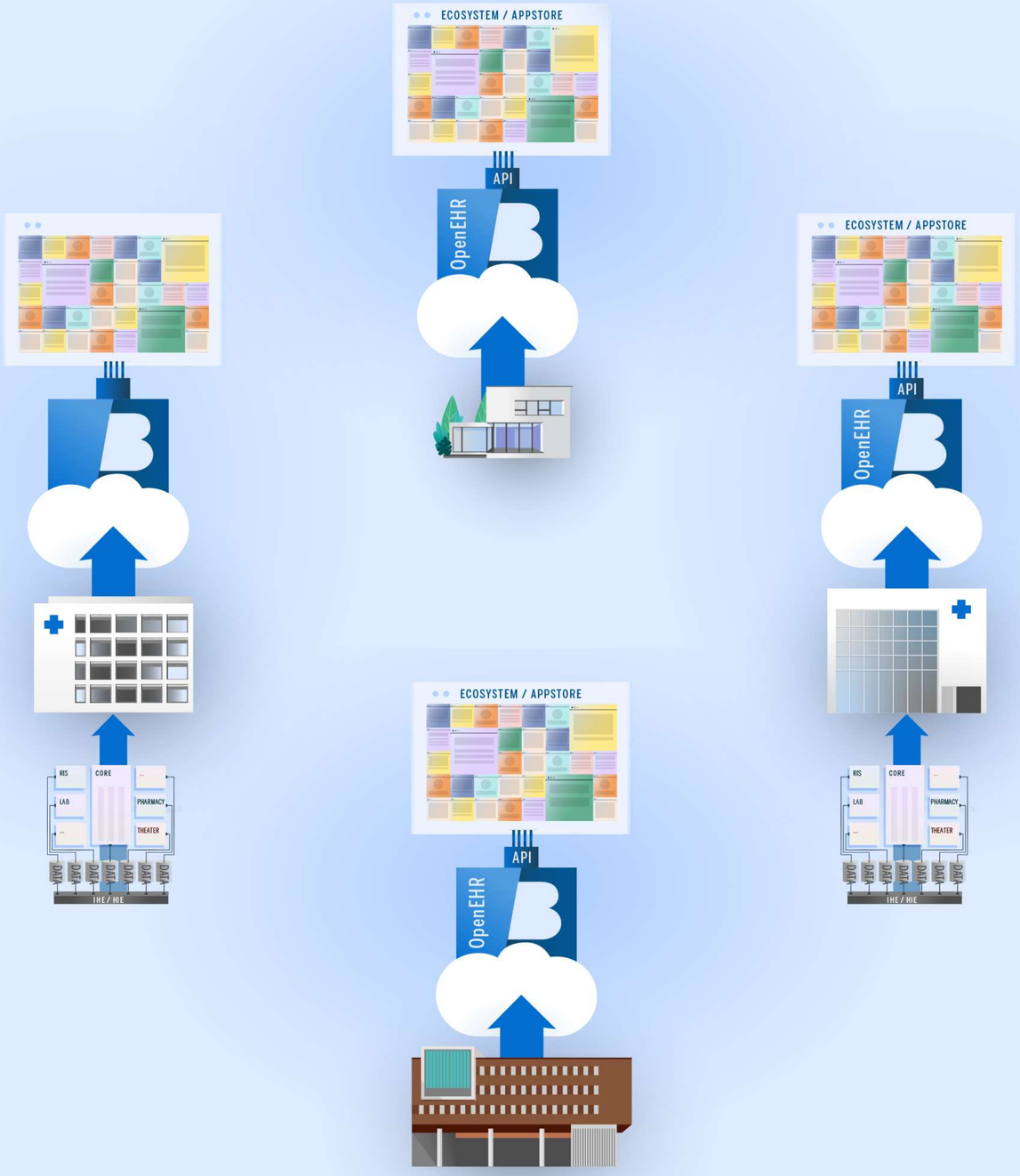
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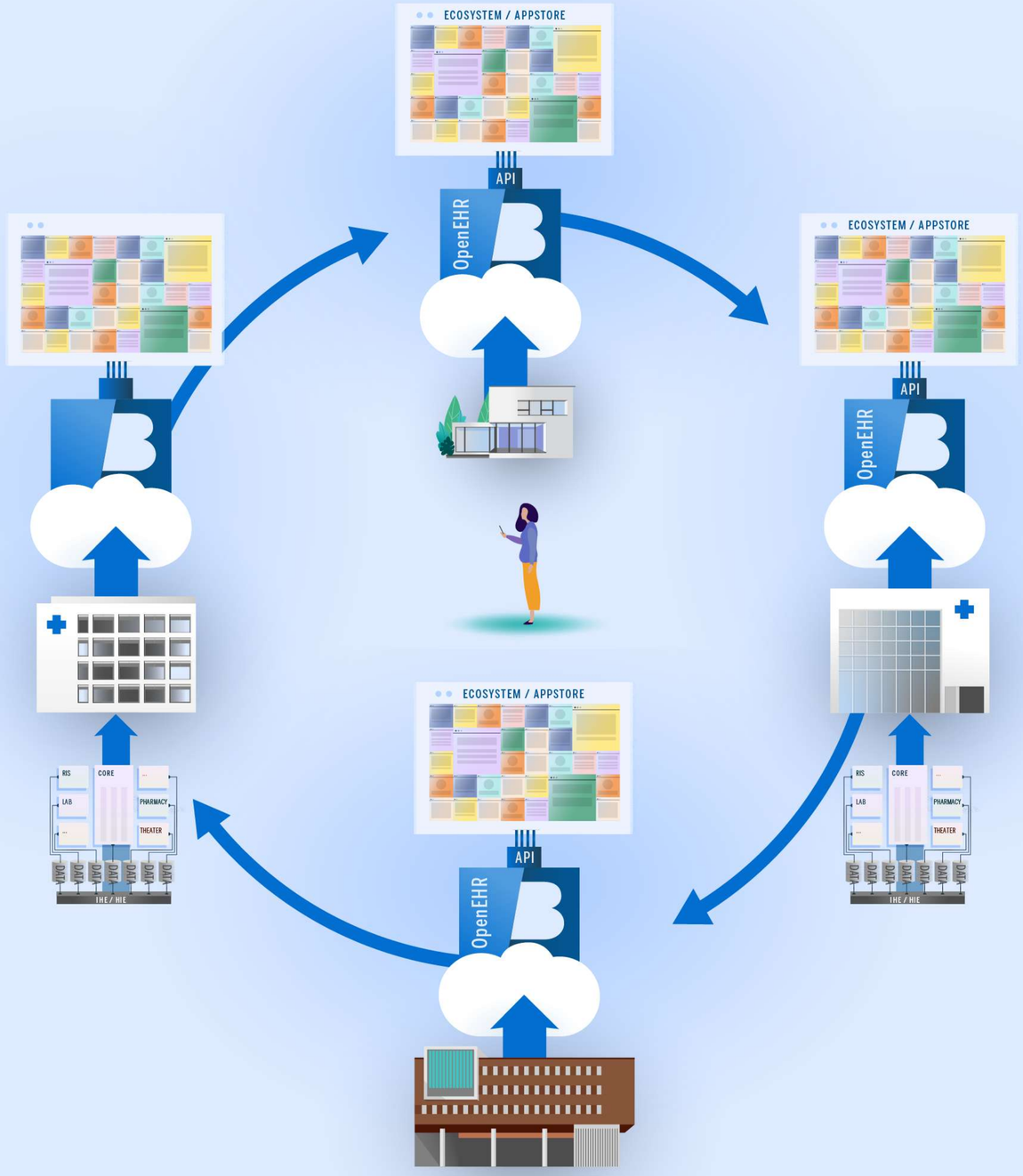
A virtual personal health record

Choice of applications, governance of data models



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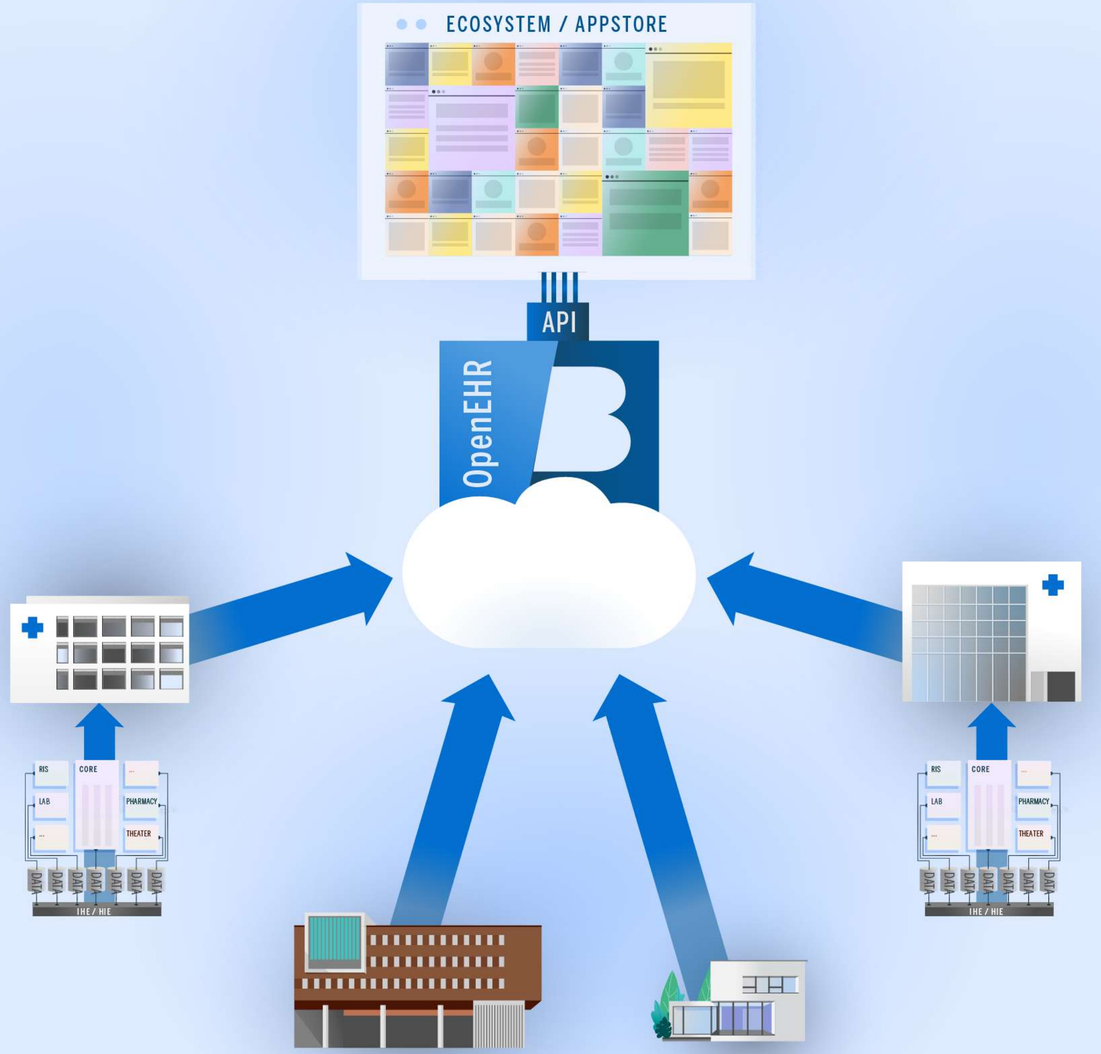

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Who is leading?

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30+ NHS Trusts & 9 regions across all 4 nations in UK use openEHR

ONE LONDON

NHS Somerset NHS Foundation Trust

NHS Wye Valley NHS Trust

NHS University Hospitals Plymouth NHS Trust

NHS Dartford and Gravesham NHS Trust

NHS South London and Maudsley NHS Foundation Trust

NHS Salford Royal NHS Foundation Trust

NHS Oxford Health NHS Foundation Trust

NHS University Hospitals Birmingham NHS Foundation Trust

UCL Health Informatics

NHS South Tees Hospitals NHS Foundation Trust

NHS North Cumbria Integrated Care NHS Foundation Trust

HSC Belfast Health and Social Care Trust
caring supporting improving together

Genomics england

GIG CYMRU NHS WALES

DIGITAL HEALTH & CARE INSTITUTE

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HiGHmed - openEHR based PLATFORM FOR INTEGRATING DATA FOR RESEARCH Germany

Generic and scalable platform architecture for integrating data from care, research, and external sources to facilitate the development of new solutions for medical data analytics

UniversitätsKlinikum Heidelberg
Medizinische Hochschule Hannover
UNIVERSITÄTSMEDIZIN GÖTTINGEN UMG
dkfz. DEUTSCHES KREBSFORSCHUNGSZENTRUM
UKSH UNIVERSITÄTSKLINIKUM Schleswig-Holstein
CHARITÉ UNIVERSITÄTSMEDIZIN BERLIN
Universitätsklinikum Würzburg
UKM Universitätsklinikum Münster
UNIKLINIK KÖLN

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All four leading Nordic EHR vendors use openEHR

tieto EVRY

DIPS

Pasient Sky™

CAMBIO HEALTHCARE SYSTEMS

better

HIMSS Analytics STAGE 6

EMRAM

CHILDREN'S HOSPITAL
University Medical Center
Ljubljana, Slovenia

EHR built on a **Digital Health Platform** based on **openEHR**

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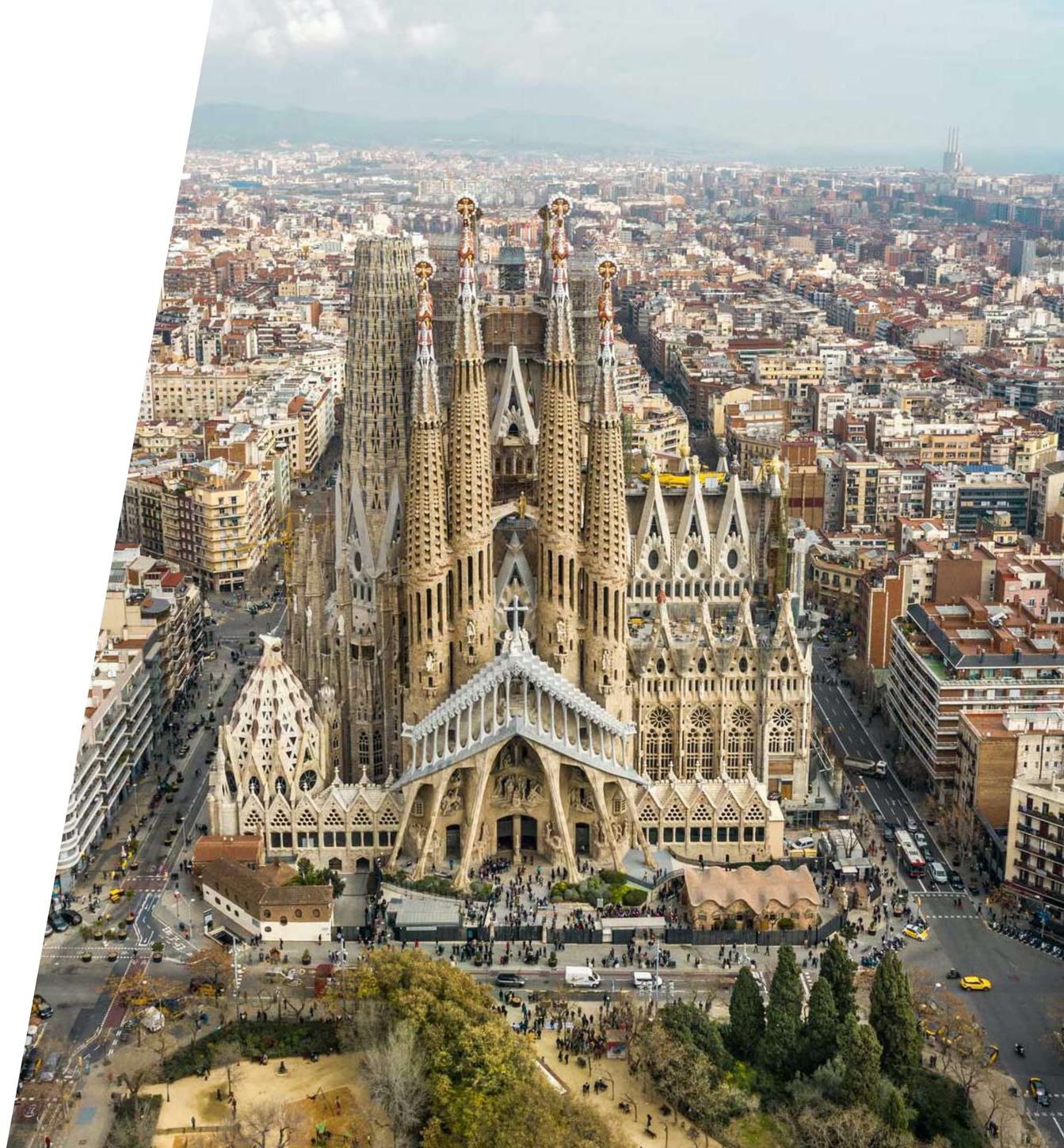
Catalan Health Service has announced it will standardise health data on openEHR

Health **data and application** infrastructure based on **openEHR**: **71 hospitals**, **369 primary care centers**, **500 other** health care entities serving **7,6 million citizens**



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THE CHRISTIE NHS FOUNDATION TRUST

Manchester, UK

openEHR & Digital health platform as a foundation for:

- Clinical forms
- PROMs
- Core EHR
- Research

NHS
The Christie
NHS Foundation Trust

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openEHR used by NHS Wales' National Data Resource programme

NWIS, with its **open platform** approach will support important initiatives such as a **cancer treatment** repository and development of a **shared medication** service built upon **openEHR**

GIG CYMRU NHS WALES

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OneLondon to design and deliver dynamic care planning based on openEHR across London

Digital health platform will reduce duplication, improve accessibility and enable shared care plans for a variety of clinical pathways including, but not limited to, end of life care.

ONE LONDON

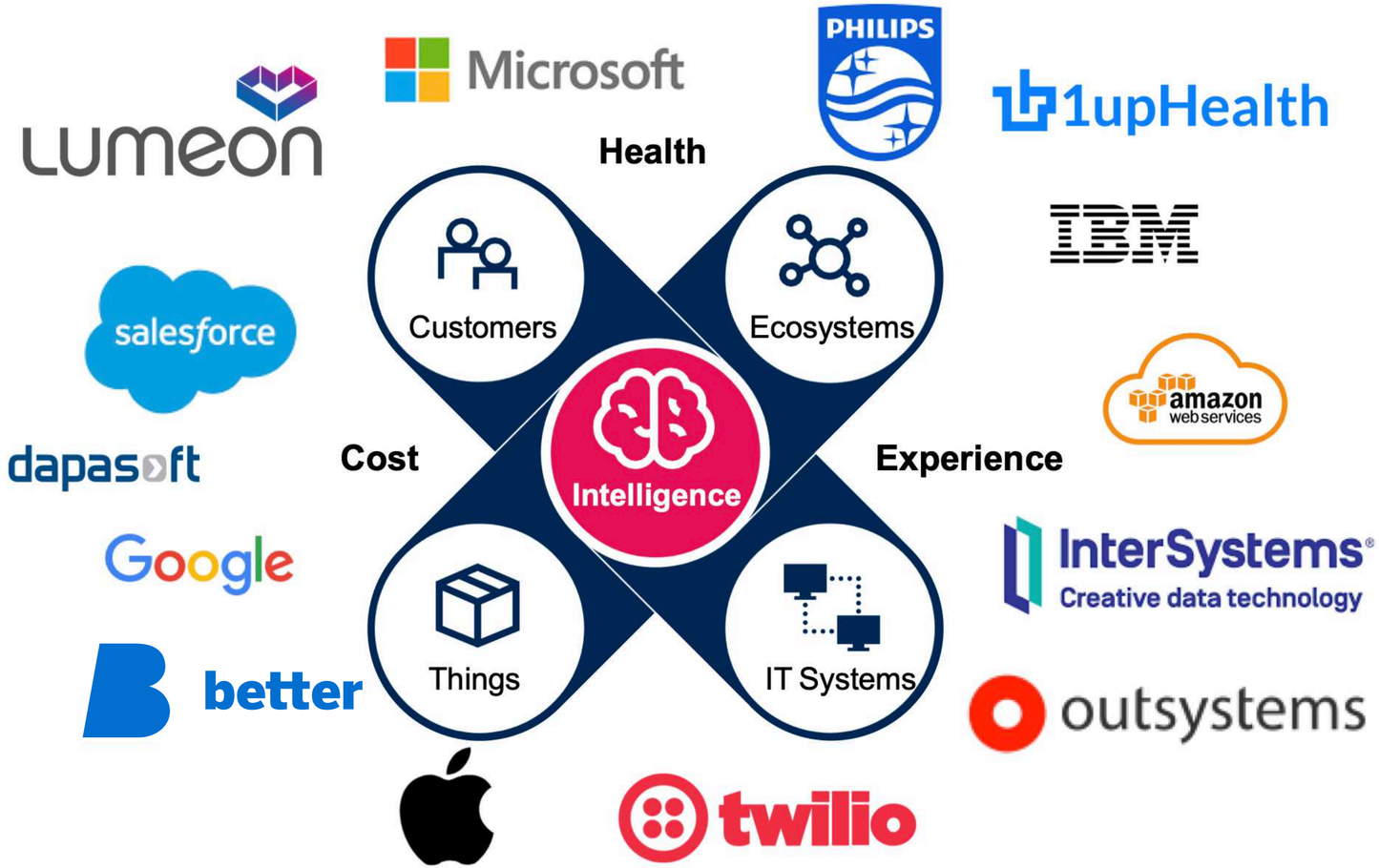
SLOVENIAN INTEROPERABILITY BACKBONE
Ministry of Health Slovenia

National infrastructure to
exchange
and store clinical documents
and structured health data

NEHR - NATIONAL ELECTRONIC HEALTH RECORDS PLATFORM
Ministry for Health Malta

National infrastructure to exchange and store clinical documents and structured health data

A New Era of Capability Has Rapidly Evolved



Gartner

Building the Digital Health Platform for Provider CIOs, October 2020

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“
Data is for life, not just for one system. If we consider that as a principle, we will design and procure systems differently.
Rachel Dunscombe
CEO NHS Digital Academy

EY

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Better data, Better care

www.better.care

Anze Droljc
anze.droljc@better.care
https://www.linkedin.com/in/anzedroljc/