

WSO2con2025

Vertical thinking in a Horizontal World

Composable Vertical Architectures for Modernization



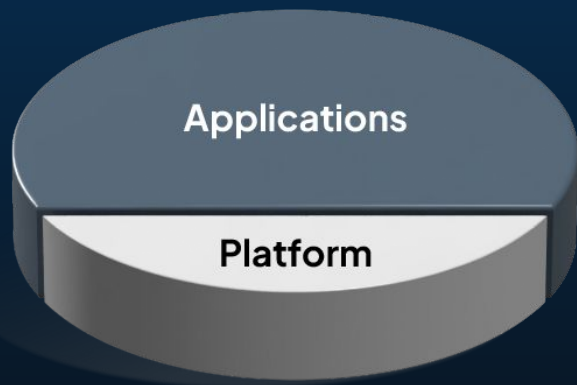
Mifan Careem
Chief Solutions Officer
WSO2



Reusability in real world architecture



Becoming platformless is freedom to create



Your customers

Business Abstractions

Platform

Technology Abstractions



700+
DIRECT
CUSTOMERS

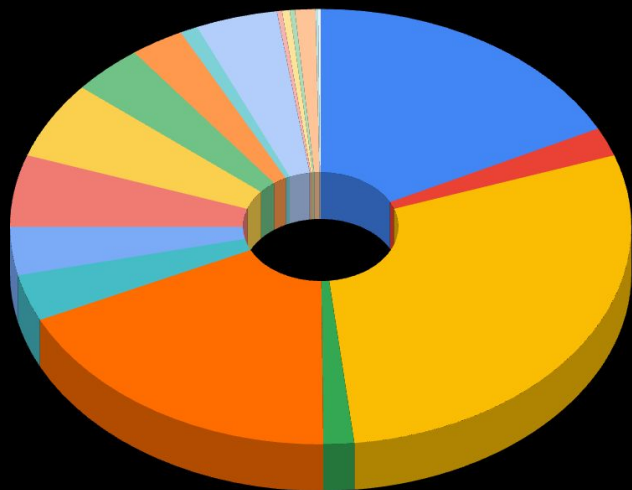
5000+
OEM
CUSTOMERS

25K+
OPEN SOURCE
CUSTOMERS

Over
90
Countries

Over
60 trillion
Transactions

Over
1 billion
Identities



- Public Administration
- Other Services (except Public Administ...
- Finance and Insurance
- Arts, Entertainment, and Recreation
- Information
- Utilities
- Retail Trade
- Transportation and Warehousing
- Health Care and Social Assistance
- Manufacturing
- Professional, Scientific, and Technical...
- Mining, Quarrying, and Oil and Gas Ext...
- Educational Services
- Real Estate and Rental and Leasing
- Administrative and Support and Waste...
- Management of Companies and Enter...
- Accommodation and Food Services

Powering **Systems of Record** market
leaders in

- Electronic Health Records Systems
- Medtech Systems
- Healthcare Claims Mgt. Systems
- Core Banking Systems
- Payment Services Platforms
- Education Administration Solutions
- Telco BSS

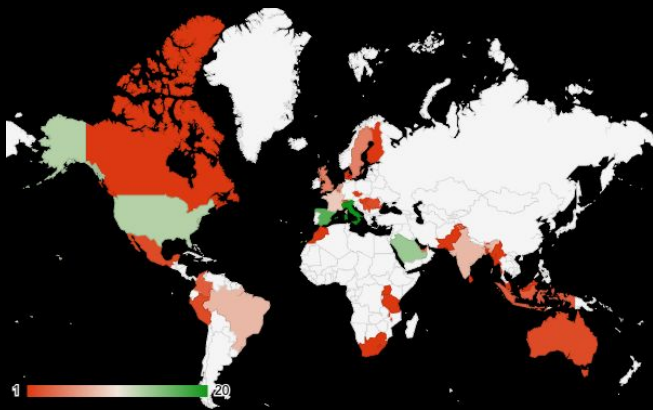
Empowering government

42 National Governments

3800 Local Govt Agencies

18 National ID deployments

2.2bn Citizens served



Smart City

Vaccine management

City and government tax

Utilities management

Citizen Portal

State Health Insurance Marketplace

Agency login

Vehicle registration

Company registration

Border control

Revenue authority platform

Digital Wallet

Survey department open data

G2G, G2C IAM

Govt. API Marketplace



Towards the **verticalization of platformless**

Horizontal view of technology

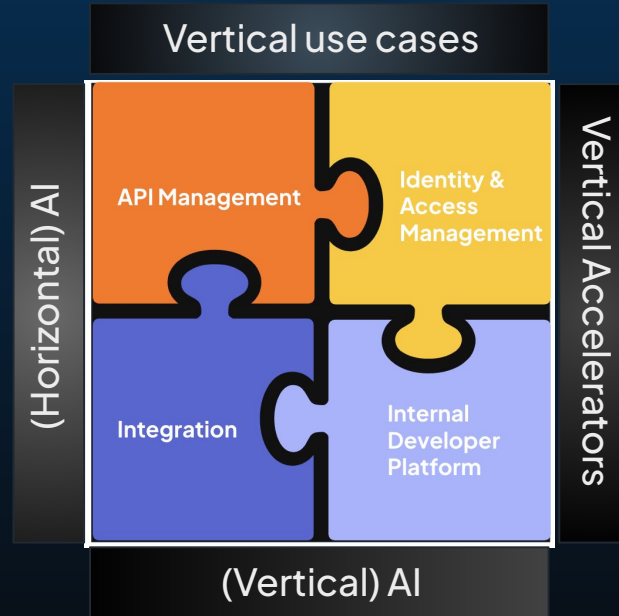
- API Gateways
- Full Life Cycle API Mgt.
- Integration
- CIAM
- Workforce IAM
- Platform Engineering
- Internal Developer Platform
- AI for Code
- Code for AI

Vertical view of technology

- Systems of record connectors (Temenos, Guidewire, Epic,..)
- Interoperability standards (FHIR, ISO20022,..)
- Regulations and compliance (PSD2, CMS,..)
- Customer 360
- Open Data, Consumer Data Rights

- Industry use cases
- Reference architectures

- Integrator co-pilot
- API chat
- AI powered adaptive auth
- Choreo co-pilot



- Domain specific AI (healthcare co-pilot)

- **BFSI, Healthcare, Govt,...**
- Reference implementations (Open Banking Berlin spec, U.S. CMS regulations)
- Connectors (Cerner, FIS, ..)
- API Specs (Patient access)
- Translators (SWIFT->ISO 20022,...)
- Protocols (HLV2,...)
- Architecture templates (Digital Govt, Healthcare SME)

A Bank's Technology Landscape

Experience Channels

Web

Mobile

Kiosk
ATM

Smart
Cards

Bots

Devices
(IoT)

Partners

Resellers

Developers

Fintech

Regulators

Core Banking System

Customer Data
Management

Liabilities

Cash and Teller
Operations

Asset Management

General Ledger

Trade Finance

Corporate

Wealth Management

Payments

Card Management

Integrations

RTGS

SWIFT

Bloomberg

CRIB

Risk Management

Market Risk

Credit Risk

AML/TF

KYC

Reporting

Advanced
Analytics

Management
Dashboard

Customer
Profiling

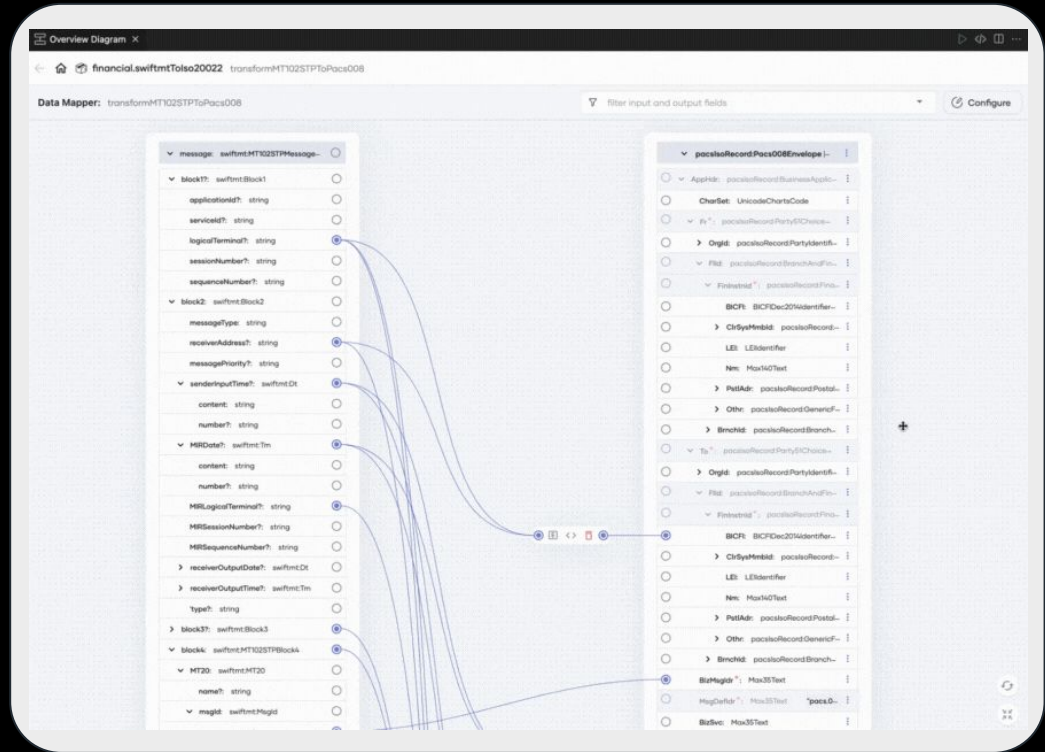
Regulatory

Misc

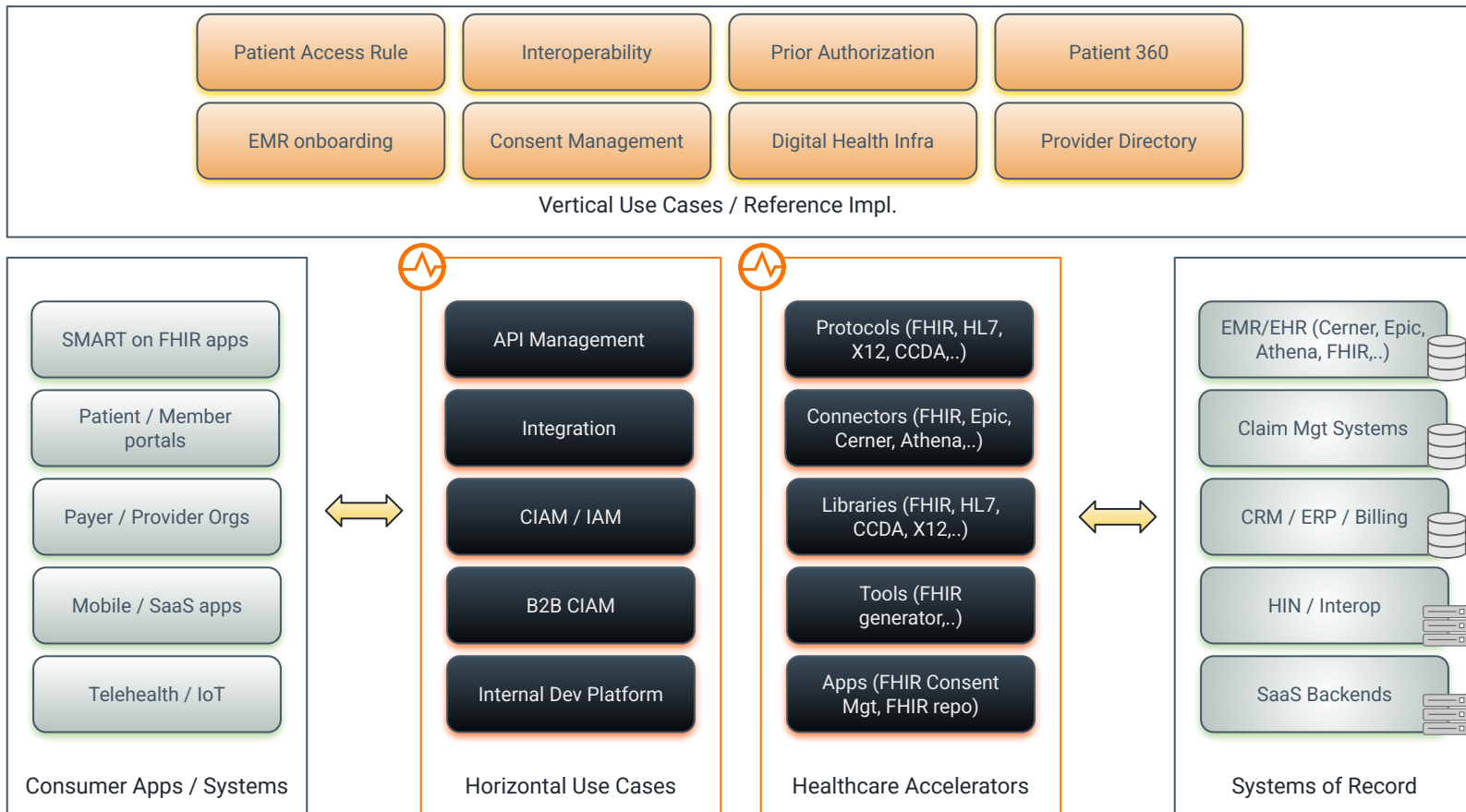


Accelerating vertical data manipulation

- Mapping data from source to destination and vice versa takes upto ~50% of development effort
- Where vertical interoperability standards apply, either the source or destination format is known (e.g FHIR, ISO 20022, HL7, X12, ...)

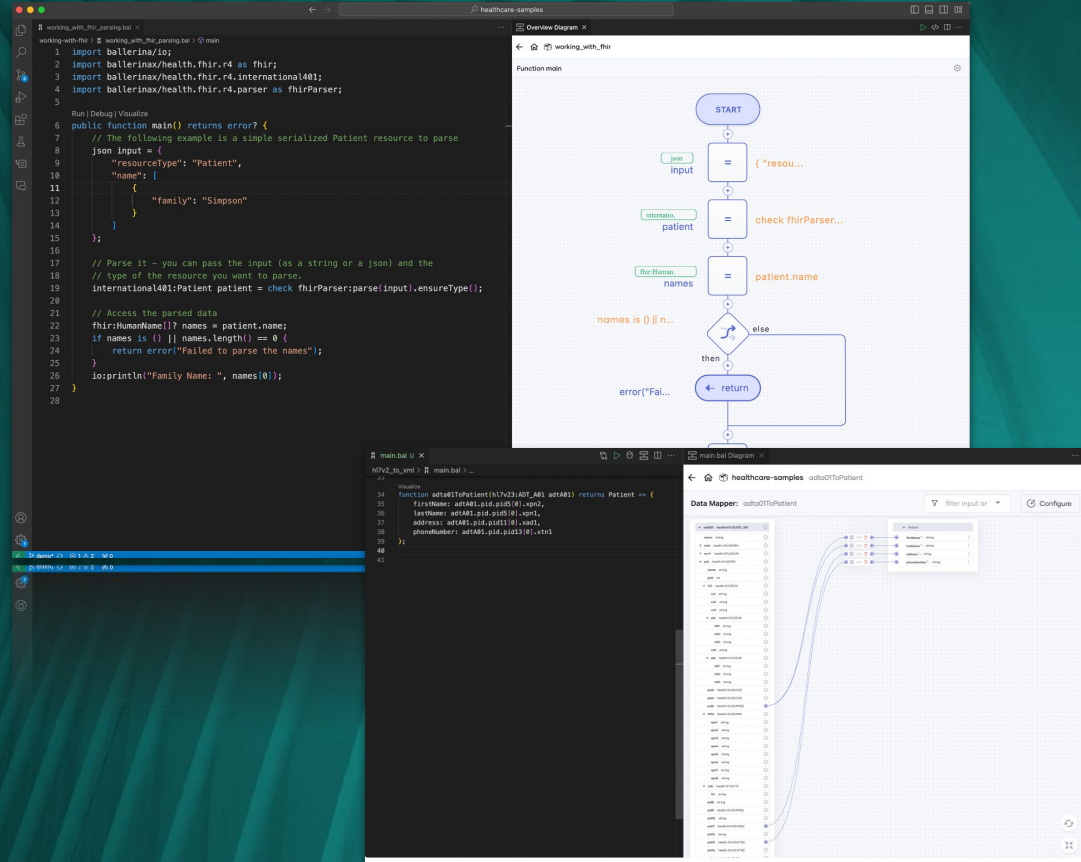


Healthcare Interop and AppDev for Healthcare Organizations



Ballerina - the cloud native technology for writing healthcare apps.

- Ballerina natively knows FHIR, HL7, X12 and the likes
- Health tooling to autogen any implementation guide
- Prebuilt connectors to known EMRs (EPIC, Cerner, Athena Health,..)
- 50-70% accelerated development of healthcare native use cases
- 70%+ accelerated development of healthcare data mapping use cases



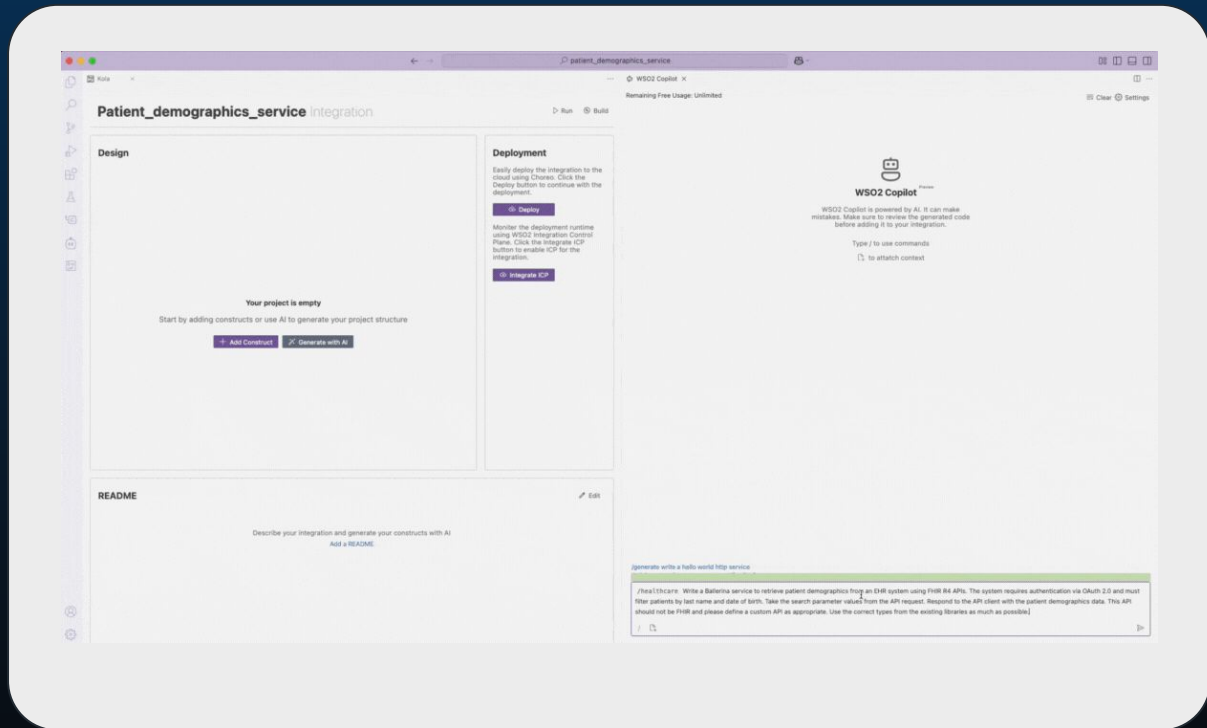


The agents are coming!
The vertical AI story

AI powered, healthcare native code generation

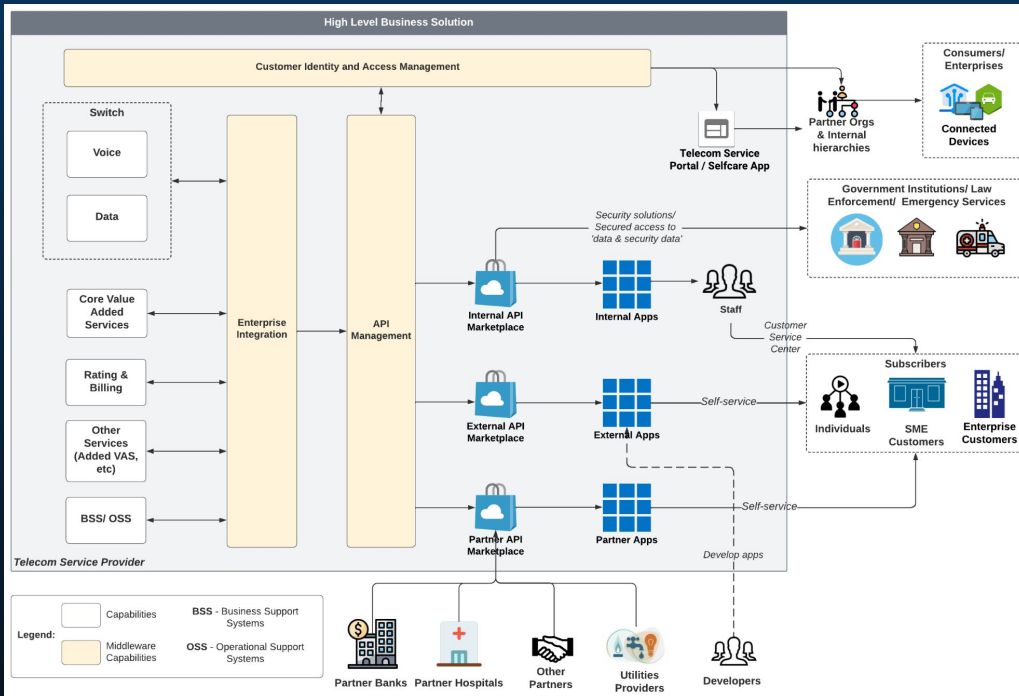
Sample Prompt:

Write a service to retrieve patient demographics from an EHR system using FHIR R4 APIs. The system requires authentication via OAuth 2.0 and must filter patients by last name and date of birth. Take the search parameter values from the API request. Respond to the API client with the patient demographics data. This API should not be FHIR and please define a custom API as appropriate

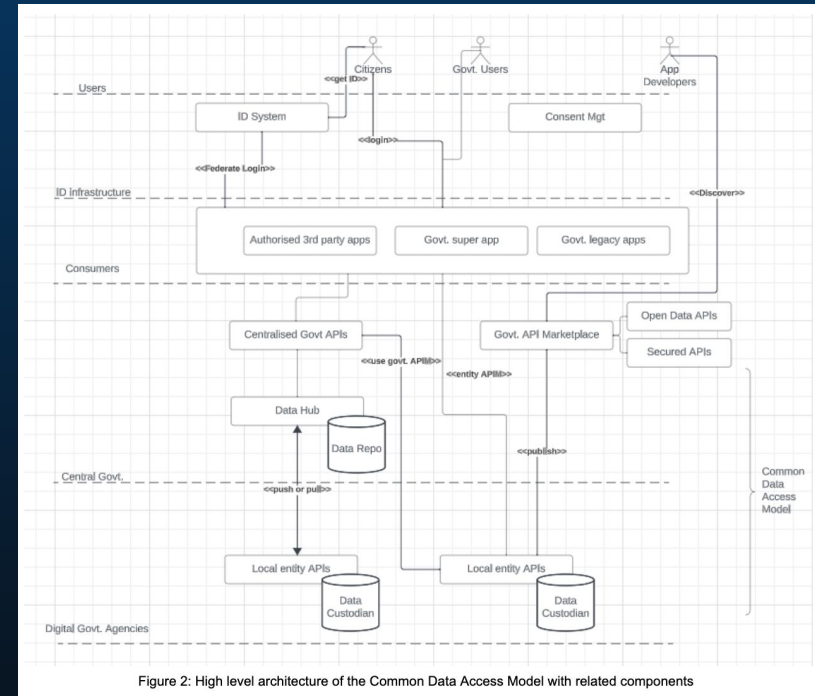


A detailed LEGO miniland scene set on a green baseplate. In the foreground, a structure is built from blue, white, orange, and red bricks. A minifigure with a yellow head and black torso is partially visible on the left. In the middle ground, a minifigure with a yellow head and black torso stands on the green baseplate. To the right, a minifigure with a yellow head and orange torso is positioned behind a structure made of grey, red, and blue bricks. Further right, a minifigure with a white head and blue torso, resembling Superman, stands on a blue baseplate. In the background, a minifigure with a yellow head and black torso is visible. On the far right, a minifigure with a brown head and red torso is seated on a yellow brick, next to a minifigure with a yellow head and black torso. The scene is composed of various LEGO bricks and minifigures, creating a complex and colorful environment.

Pre fabricated, Reusable, Vertical Architectures

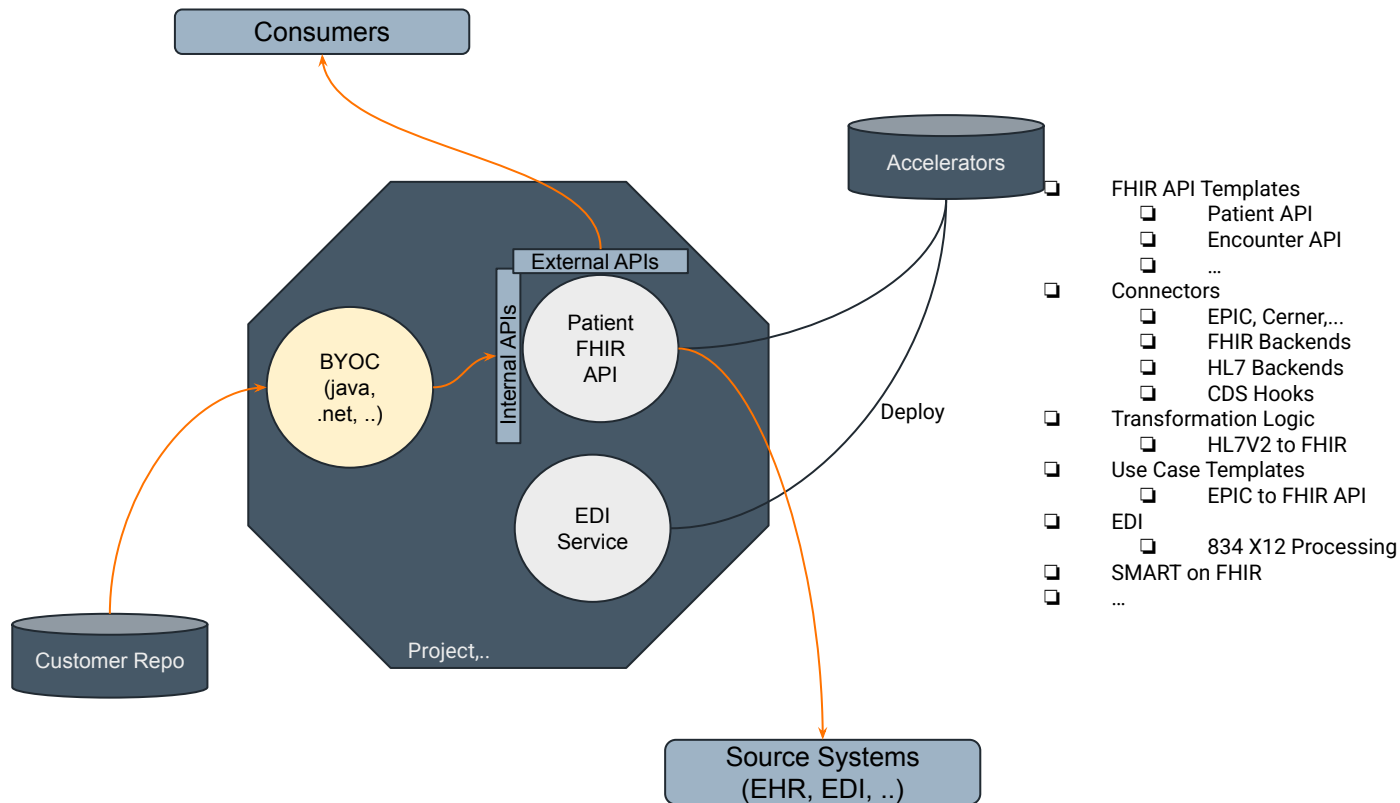


Telco reference architecture

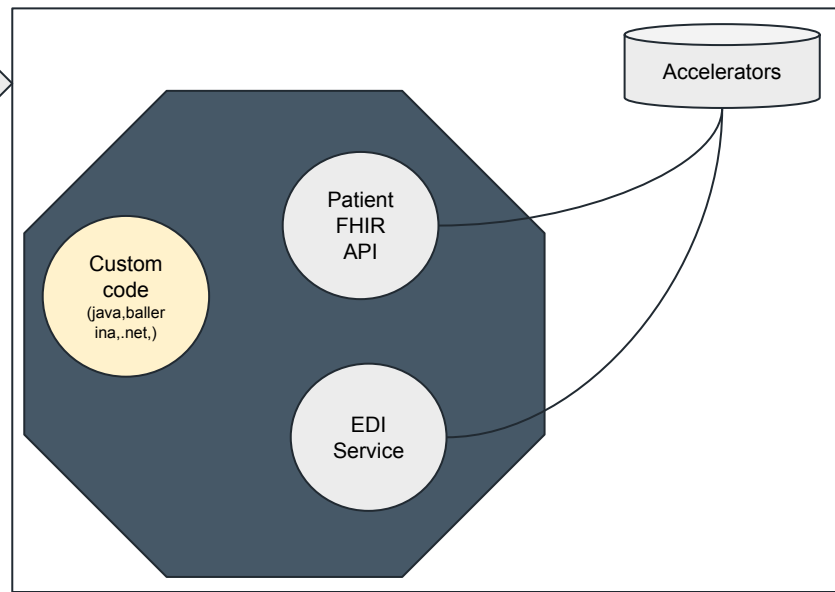
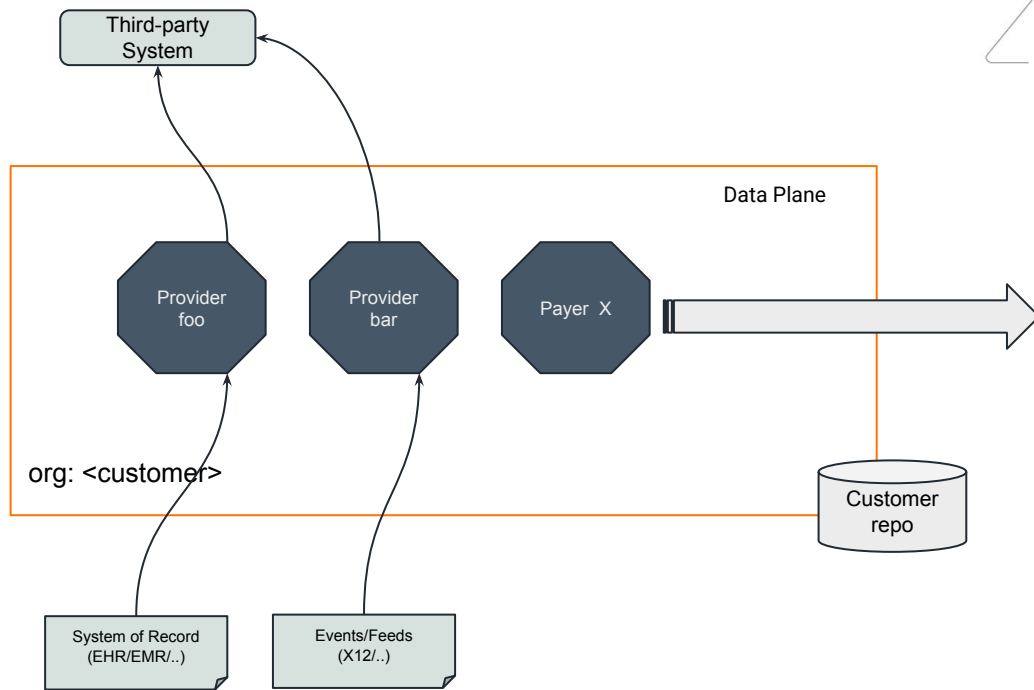


Govt. reference architecture

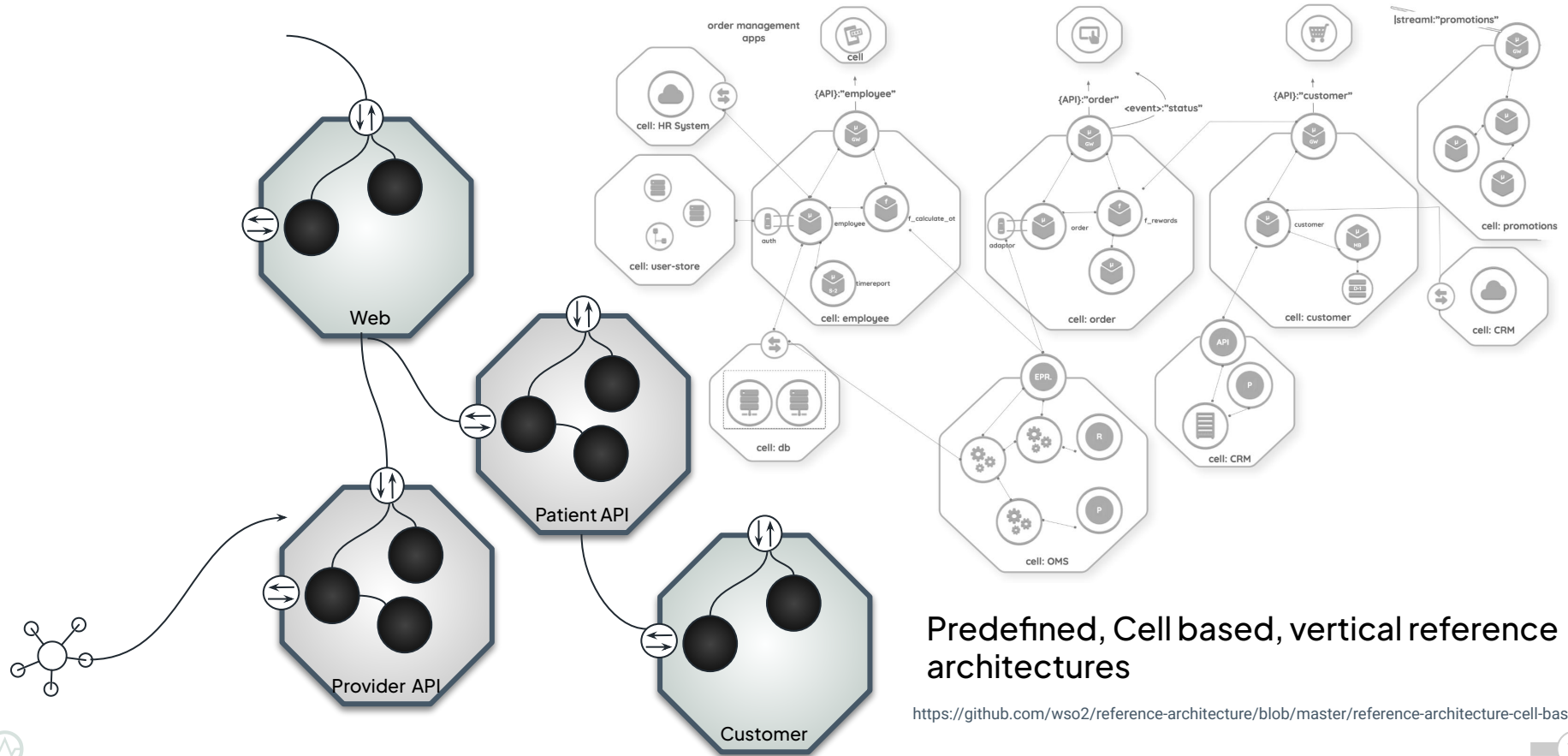
Deploy out of the box accelerators as APIs







Cell based architecture meets vertical reference architecture



The winner ain't the one with the fastest car, it's the one who refuses to lose.

Dale Earnhardt



Photo by [SHUXIN WU](#) on [Unsplash](#)



Towards a vertical, composable business

Photo by [Ryan Quintal](#) on [Unsplash](#)