An NHS Analyst’s Perspective on the Federated Data Platform

About me...

Head of Intelligence and Analytics at Sherwood Forest Hospitals

13 years in the NHS in analytical/BI roles across CSU, Commissioning and Acute

Led data engineering, data science and analytics teams

Graduate of NHS Digital Academy

Proud member of APHA

FEDIP Registered Advanced Practitioner

Part of NHS CDAO Network

The small print…

- I’m not an expert
- I don’t work for Palantir, or NHSE
- …and they’re not paying me…
- I’m not going to discuss opinions about Palantir, politics or morality
- These are my opinions… everyone is entitled to theirs.
- This is unlikely to answer all your questions – please stay curious and find things out for yourselves

You can expect…

- Honesty
- My personal experience
- Relentless Optimism

Why is this needed?

Actual quotes about data warehouses…

"Not sure which table to use, we have 6 that say the same thing, but they're all different"

"If only we had another 2 data engineers…"

"The systems don't talk to each other"

"We don't have that in the data warehouse yet"

"Much of our code is a black box, a contractor built it and never documented it"

"They don't understand how complex the data is"

"Can you just separate database over here for me to store my analysis in?"

"The data warehouse has gain this morning"

"We get blamed when the data is bad, but it's wrong at source…"

"We don't have any DBAs – they're tied up on other things"

"every time someone makes a change it breaks everything else!"

Key Issues

- Local autonomy has led to fragmented, siloed systems
- No national common data model
- Workforce skill and knowledge disparity

Outcomes

- Lack of joined up decision making
- Waste and duplication
- Poor data quality and lack of assurance
- Ultimately worse patient outcomes

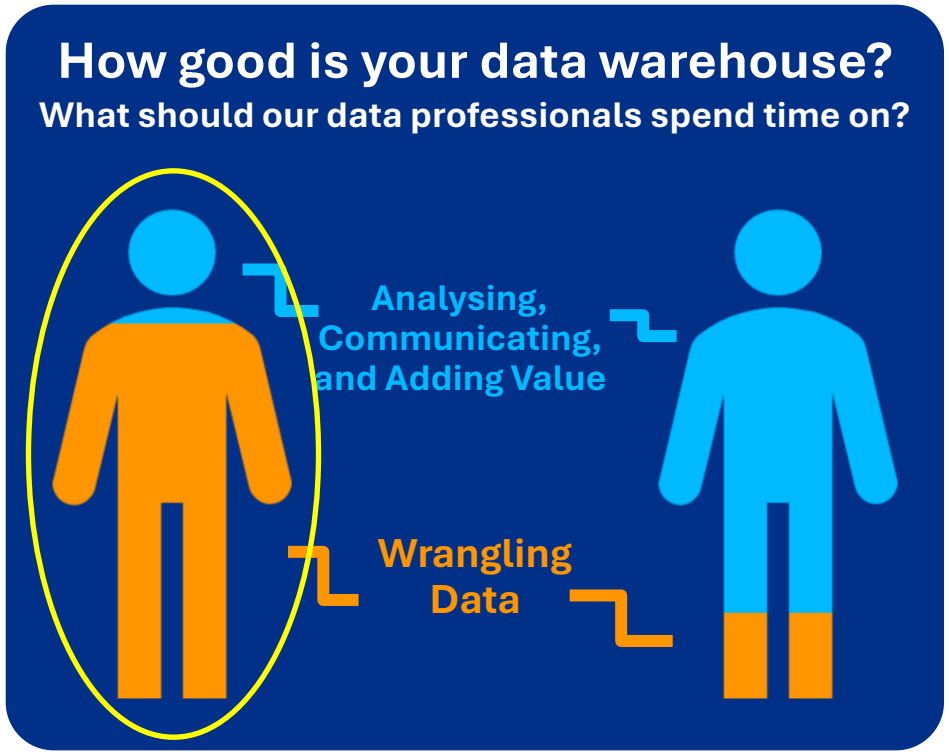
Foundations are <u>really</u> important….

Foundations are important....

What Makes a Bad Data Platform?

Issues with (many) legacy data NHS platforms

- Fragile – easily broken by erroneous data, changes, or people in general…
- System centric – Perpetuate siloed data
- Analysts/data professionals need to spend time wrangling data
- Architecture starts with good intentions, but falls victim to workarounds and technical debt
- Limited to what IT depts can provide
- Little resource in the organisation to maintain
- No ability to share data securely beyond internal use



What Makes a Good Data Platform?

My checklist for addressing the issues with legacy NHS data platforms.

- Scalable, Stable and Secure
- Patient centric (thematic)
- Bringing data together across multiple systems
- Future proof – Able to handle changes, and new data easily
- Lets “analysts be analysts”
- Enabling advanced analytics, data science, predictive analytics – and ‘productionizing’ outputs
- Transparent data lineage, data catalog
- Integrates ability to interact with data, beyond just consumption

What is FDP?

- Common technology
- Common data model
- Common toolset
- Reduced barriers to entry for workforce
- Ability to share data safely and securely between organisations – where legal

What is FDP?

Technical Infrastructure

AWS Infrastructure

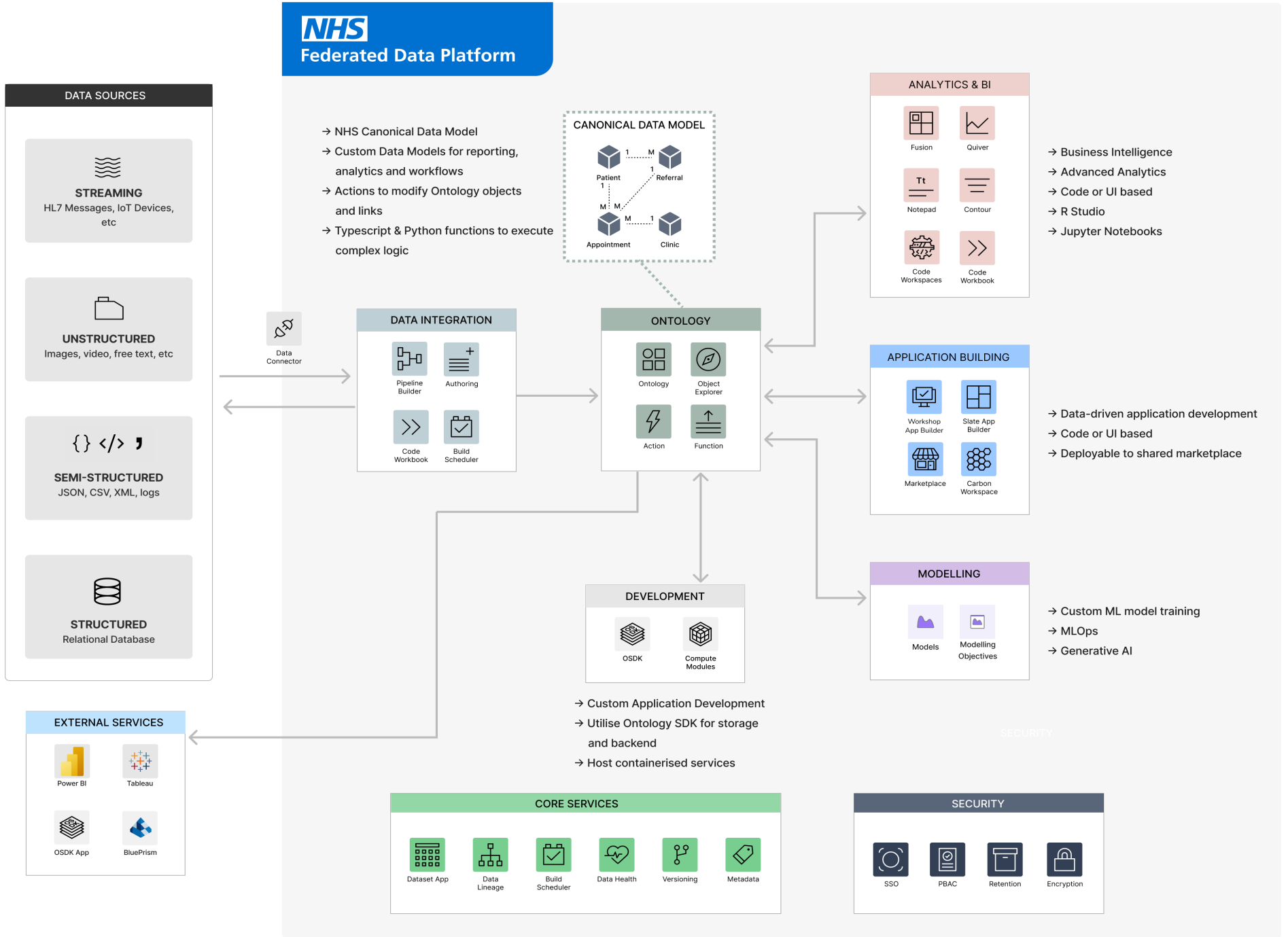
- UK Data Centre
- Split by tenant (each organisation)
- File storage
- Apache Spark + DataFusion for compute

Foundation

Operating System

Palantir Foundry

- Orchestrates the infrastructure, provides GUI for building tools – managing data flows, building and deploying models


NHS
Federated Data Platform
DATA SOURCES
STREAMING
HL7 Messages, IoT Devices, etc
UNSTRUCTURED
Images, video, free text, etc
SEMI-STRUCTURED
JSON, CSV, XML, logs
STRUCTURED
Relational Database
→ NHS Canonical Data Model
→ Custom Data Models for reporting, analytics and workflows
→ Actions to modify Ontology objects and links
→ Typescript & Python functions to execute complex logic
CANONICAL DATA MODEL
Patient
Referral
Appointment
Clinic
Data Connector
DATA INTEGRATION
Pipeline Builder
Authoring
Code Workbook
Build Scheduler
ONTOLOGY
Ontology
Object Explorer
Action
Function
ANALYTICS & BI
Fusion
Quiver
Notepad
Contour
Code Workspaces
Code Workbook
→ Business Intelligence
→ Advanced Analytics
→ Code or UI based
→ R Studio
→ Jupyter Notebooks
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Slate App Builder
Marketplace
Carbon Workspace
→ Data-driven application development
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Modelling Objectives
→ Custom ML model training
→ MLOps
→ Generative AI
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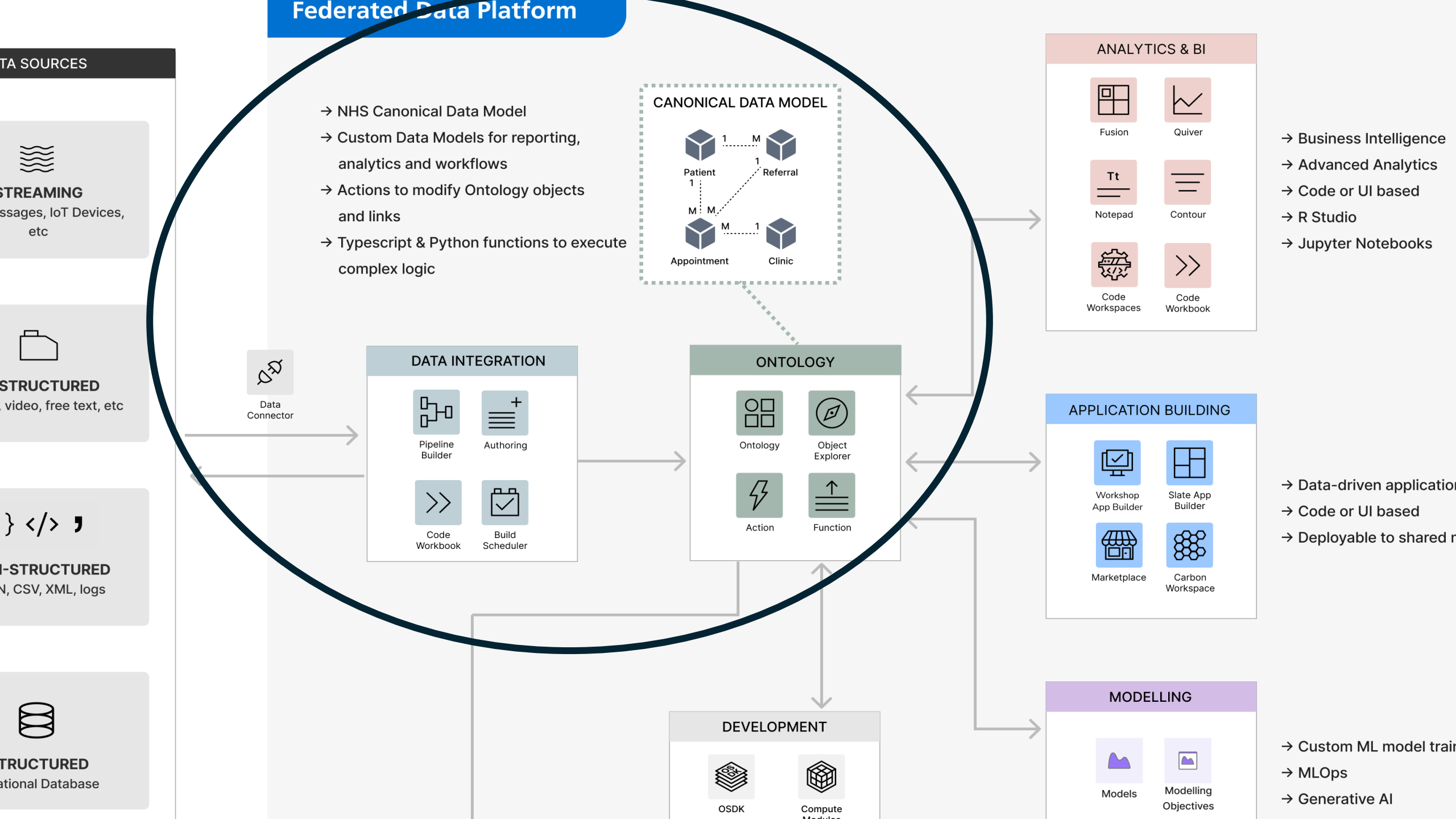
OSDK
Compute Modules
→ Custom Application Development
→ Utilise Ontology SDK for storage and backend
→ Host containerised services
EXTERNAL SERVICES
Power BI
Tableau
OSDK App
BluePrism
CORE SERVICES
Dataset App
Data Lineage
Build Scheduler
Data Health
Versioning
Metadata
SECURITY
SSO
PBAC
Retention
Encryption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→ Generative AI

What is FDP?

The Programme

- Began in 2023
- Initial focus on operational products for acute hospital providers
- Recently allowing trusts to use FDP as their main data platform
- Voluntary Adoption for providers and integrated care systems
- ‘Incubator sites’ to develop and test products
- Rolling out to Mental Health, Community and Ambulance providers
- Funded nationally for 7 years

What is FDP?

Federated Data

Common infrastructure allows organisations to expose elements of their data to other FDP tenants securely

- Reducing manual reporting burden – allowing for more automation
- Shared waiting lists between trusts and across systems allowing for more joined-up care and more efficient deployment of clinicians
- Local cost collection pilot

What is FDP?

Feeding Innovation

Common data model, infrastructure and toolset

- Shared RAP functionality across organisations
- Allows for cross-organisation collaboration on products
- Marketplace of products

What is FDP?

My Opinions

The Good

- Great Technical foundation
- Ticks all the boxes for a ‘good data platform’
- Ability to have some standards that cross organisational boundaries, enabling RAPs, and shared products
- Reduces barriers to entry for analytical staff – friendly toolset
- Data science tools built in
- Raises the floor – enables poorer trusts to use great technology

The Lessons Learned

- Little engagement with data and analytics professionals – Engage them early and give them a ‘seat at the table’
- Focus on operational products means it’s seen as a ‘black box’ by many – Ensure transparency and access for the people who need to maintain the system
- Vendor lock-in – Will always be a problem with a single national solution
- Assumptions – Assuming people will be happy with change

The Unknown

- Funding following the initial 7 year contract
- Strategy for mandating – and the implications to those who have their own mature data platforms
- Future cost of ownership for organisations

How FDP can help a health system

Connecting data across organisations

- Enables a ‘Learning health system’
- Encourages innovation
- Provides stability and standardisation

Achievements so far:

- 80,923 – Total number of additional patients undergoing procedures in theatres
- 77,206 – total number of patients safely requested for removal from the inpatient waitlist
- 213,101 – total number of patients safely requested for removal from the outpatient waitlist
- 2,232,741 – total number of records that have been reviewed using the RTT validation product
- 563,239 – total number of people who have been removed from the waiting list

NHS England October 2025

Questions...