NTT DATA

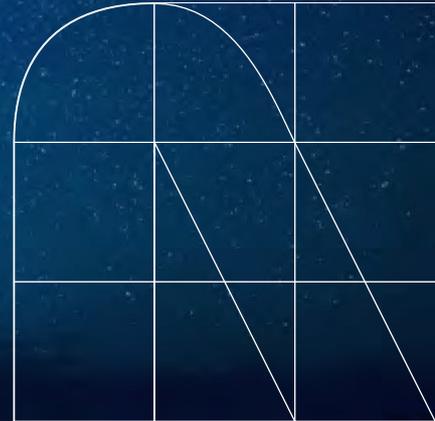HM Treasury | UK | Business Strategy & Advisory

Data Management Strategy

Client profile

HM Treasury is the government's economic and finance ministry, maintaining control over public spending, setting the direction of the UK's economic policy and working to achieve strong and sustainable economic growth.

Why NTT DATA?

- We build innovative, industry-leading solutions that grow enterprises' revenue and keep them ahead the competition.
- We take advantage of the growing convergence of IT and connectivity services to connect people and things.
- We manage companies' applications, data and infrastructure to decrease costs and create greater efficiencies.

HM Treasury

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"HM Treasury sits at heart of the UK government and forms a hub for the most critical data driving the national economy. This project started not with a technology platform but a set of critical business outcomes to provide more accurate advice to ministers, financial markets and senior officials across the administration. We were able to show how this could be achieved - and with greater efficiency. NTT DATA are proud to have delivered a project with such incredible impact."

Bill Wilson, Head of Data & Intelligence Solutions – NTT DATA

Business need

HMT relies on data imported from various departments and research organizations. This poses challenges in acquiring, transforming, and organizing the diverse range of data.

While data volume is not an issue, the variety of data is extensive. It involves planned and repetitive data transformations and urgent and ad-hoc queries from Ministers and officials. Data analysts have adapted their skills and tools to handle these demands, but automation is limited due to time constraints.

Recognizing the need for improved efficiency, HMT aims to enhance its data management processes by optimizing data sourcing, standardization, sharing, re-use, exploitation, and visualization.

Solution

NTT DATA organized workshops involving data analysts and policy specialists to identify key findings. The workshops revealed that the organization was facing challenges in effectively managing the increasing volume of data due to a lack of capacity, focus, and expertise.

In response, NTT DATA provided recommendations aligned with each finding, including:

Increasing automation through the implementation of a modern data platform with data engineering capabilities.

Introducing business and technical metadata capabilities to catalog source data, models, and derived outputs, while also describing their lineage.

Formalizing data ownership and stewardship aligned with specific data domains to enhance communication of expertise, standards, and responsibility.

Establishing a central data management capability to promote best practices and provide expertise, data services, and education. Additionally, NTT DATA created a comprehensive "reference architecture for data management and governance"

Outcome

The evaluation results of:

- Preserve the one set of numbers for data.
- Provide more agile, business-controlled data & analytics when required.

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TECHNICAL SPECIFICATIONS

HMT possesses a distinctive technical profile characterized by its role as a primary data importer from other government departments. To enhance technical efficiencies within its data management process, data sourcing, standardization, exploitation and visualization:

1. NTT DATA created a detailed reference architecture for data management and governance. This was centered around the paradigm of multiple data-centric personas, co-existing across the work-mix spectrum of ad-hoc to highly repeatable.

2. The reference architecture introduced many new processes, tools, technologies, roles and capabilities that would ultimately impact all data analysts and data flows.

3. This was built on the success of the HMTs Development Environment – a dedicated virtual environment for data scientists delivered and managed by NTT DATA – that provided access to data sandboxes.

4. NTT DATA advised initiating the implementation process by selecting specific critical use cases to facilitate progress toward the reference architecture's ultimate state.

5. These chosen use cases require incorporating several essential reference architecture elements - deployment of a new cloud data platform, the automation of data acquisition and transformation processes, storage in formats accessible to humans and systems, and establishment of a fresh metadata repository.

This approach gave rise to the concept of a thin slice through the architecture for a new dashboard for the Chancellor's office:
This dashboard drew together many of the key UK economic indicators into a single interactive visualization, consolidating slowly changing historical measures with the near real-time financial market and economic indicators. This was done through:
Solution components, modern data platform design
Cloud infrastructure implementation, security, data engineering patterns
Metadata management solutions
A data lake architecture was defined by extending the Azure Cloud Adoption Framework for HMT's needs and building a Data Lakehouse architecture foundation with Synapse.
In addition, the use of Microsoft Purview implementation combined automated data asset scans with Data Steward-led data classifications and business definitions.