

Helping *HMRC* transform legacy money management services to the cloud



The department engaged Capgemini to design a new efficient, secure, and future-proof service to speed up the resolution of tax overpayments and other payment anomalies

HM Revenue and Customs (HMRC) is the UK's tax, payments, and customs authority. It collects the money that pays for the UK's public services and helps families and individuals with targeted financial support.

The department is transforming its IT estate to provide a cost-effective, resilient, more productive, and sustainable IT platform. A key component of this is the migration of more than 650 services from existing data centres to the cloud.

Overview

Client: HMRC

Region: UK

Industry: Public Sector

Client Challenges:

HMRC wanted to access the benefits of transitioning complex legacy services into the cloud, while retaining business functionality, business data and knowledge.

Solution:

The department partnered with Capgemini to design a new payment resolution service; a containerised set of services within the new HMRC container platform.

Benefits:

- Secure and seamless transition to the cloud in a single weekend, ensuring business continuity
- Instant access to tax data and records via a modern, user-friendly, and intuitive interface
- Efficient resolution of tax overpayments and other anomalies
- Robust, scalable, and cost-effective platform, fully integrated with other HMRC systems.



Removing barriers to transform legacy assets

In line with this transformation strategy, HMRC wanted to replace the legacy technologies that ensure that tax receipts are collected, recorded, managed, and allocated to the correct accounts. This included a pair of closely aligned services used to investigate and resolve anomalies such as overpayments and unallocated tax receipts. One of these services accepted details of receipts from individuals and businesses across all tax regimes, the other enabled HMRC staff to view customers' payment information and managed overpayments and account allocations.

With its strategic goals in mind, HMRC sought the support of Capgemini to decommission and replace both systems with a new cloud-based service built using a modern technology stack.

Stakeholder engagement ensures solution design meets user needs

Engaging closely with HMRC stakeholders, a team of Capgemini experts designed a solution that merged the two mainframe-hosted systems into one, using cloud native services provided by Amazon Web Services (AWS). The team followed DevOps and Agile methods and worked through an agreed project backlog to deliver incremental system change.

The complexity of HMRC's IT estate meant that it was imperative to account for the unique needs of each tax regime in the solution design. Working in collaboration with HMRC, the team undertook comprehensive user research and stakeholder engagement to fully capture these requirements. This was validated by extensive proof of concept, prototyping, business confidence, and user acceptance testing to ensure all needs were met.

The resulting new system is a containerised set of services within HMRC's container platform, which was developed by Capgemini to enable dynamic scaling to meet peaks and troughs of demand.

A new AWS relational database service stores the persistent data, replacing indexed mainframe master files used by the legacy services, while an old green screen user interface (UI) was replaced in the new service with a modern browser-based UI. This ensured that key information is presented in an intuitive format, enabling 3,500 users within 12 HMRC directorates to navigate the system and access data, events, and records quickly and easily.

Following UK government Security by Design principles, security was considered from the outset, ensuring data could be protected both in transit and at rest.



A resilient and secure digital platform that retains legacy expertise

The new service successfully launched in full over a single weekend without major incident. Crucially, it retained all the assembled data and business functionality from the legacy services, enabling a seamless transition to the cloud and vital continuity for users while unlocking the benefits that the cloud offers. As a highly available, end-to-end service, it operates across multiple availability zones, with applications and infrastructure able to scale to meet demand. This provides the flexibility to handle the peaks and troughs of traffic inherent to the demands of HMRC's tax regimes and contributes to HMRC's sustainability goals by scaling down to a minimal footprint overnight.

This cloud-agnostic solution supports the department's strategic exit from existing data centres as a key element of its transformation agenda. It reduces HMRC's dependency on proprietary platforms and ensures that existing business and tax regimes continue with minimal changes. Whilst moving from legacy technology – which required increasingly scarce, highly specialised skills to maintain – to modern, robust, and resilient systems reduced operational risk.

Ongoing change is supported through fully automated testing at unit, system, and performance proving levels. Previously, implementing system changes was a manual process that could take weeks or months. Now, changes can be implemented, tested, and deployed in just a few hours.

With the new service fully integrated into HMRC's IT estate, the sharing of data can be achieved in near real time. For example, integration with the Government Banking and Payments' Intelligent Payment Processing system is helping to streamline the resolution of payment problems by identifying trends and patterns that can be addressed at source. This collaboration demonstrates how operational risk in legacy systems can be mitigated through system modernisation and cloud migration.

About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2023 global revenues of €22.5 billion.

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