Summary

The UK undertook a methods change in 2019/2020 transitioning from a rebased to a chain-linking series. Our legacy processing system could not facilitate this and so we migrated to new platforms aiming to modernise processes, improve performance and analytical tools as well as adopt online data collection tools.

Legacy System

System architecture

The system was developed over time with no coherent design principles. It was initially built to calculate index values but was extended to include price collection and validation as well as processing a limited range of admin data sources. This resulted in a complex and unaudited database.

New System

Goals

Price collection facility separated out from data processing in order to allow us to utilise electronic questionnaires.

Admin Data sources are handled as part of the **data processing system** which also processes all survey data received from the data collection facility. This allows for rapid integration of new data sources as they become available. **Data validation** is based on outlier identification with the aim of supporting the data narrative included in each publication.

Index Calculation system built to facilitate chain-linking using a virtual environment supported by Cloudera providing increased accessibility, reliability, and data security.

The new environment allows the production team the flexibility to code their own analysis tools as required.

System architecture

Each processing discipline was separated out into a technology platform suitable for performing each task effectively. Each system was built with a modular structure allowing for future changes to be integrated. Clear structure to data pipelines avoided any redundancy or repetitious data processing within the database.

Office for National Statistics

Transforming production systems

An efficient modular system designed to evolve

> The secret of change is to focus all of your energy, not on fighting the old, but building the new.
> – Socrates

Our journey

Assess
Documented and understood existing system and functionality. This was done by Business Analysts who provided a broad understanding of methods and areas that required solutions.

Requirements
Scoped out requirements and methodology for new system. This became the 'blueprints' for all system build and testing work that followed. All requirements were signed off by the Product Owner.

Suitability
Researched suitable platforms in which to build system. We built data collection and data processing in separate environments to best suit the requirements of each discipline.

Build
The build team wrote code for the new system based on requirements using test data. The build work was delivered in sprints using a Kanban Board.

Testing
User testing was performed by a dedicated team. Their purpose was to create test scenarios that ensured all requirements were met. These were documented in full to ensure confident delivery to the end user.

Engagement
Engaged with stakeholders and end users throughout the development. The Product Owner ensured that all user requirements were met and communicated to ensure confidence in the system delivery.

Delivery
Delivered the new system ready for use in production of Business Price statistics. The new users were supported and provided with guidance notes that facilitated the integration of the new system within their monthly publication cycle.