



# Demonstrating the value of data sharing between public sector agencies

VIQTOR DAVIS and the Worcestershire Office for Data and Analytics

**VIQTOR DAVIS**<sup>®</sup>

DATA CRAFTSMANSHIP

[viqtordavis.com](https://viqtordavis.com)

# VIQTOR DAVIS

DATA CRAFTSMANSHIP

## About WODA

The Worcestershire Office for Data & Analytics (WODA), is a newly established programme, jointly backed by a range of public sector partners operating across the Worcestershire region. It aims to drive cultural and systematic change in the way that data is shared and harnessed between public sector partners, with the goal of improving outcomes for residents and businesses.

## The challenges WODA faces

**In common with many organisations, WODA and its partner organisations suffered from a spreadsheet culture that encouraged data silos to develop, with much data preparation being done 'off system'. Manual consolidation and manipulation of data in spreadsheets was common, a process which is time consuming, error prone and offers little or no traceability.**

These issues meant that the quality of the data WODA had to work with was extremely variable, with no tools in place to enable systematic measurement and improvement. There was a very limited ability for business users to self-serve and such users were not able to confidently use modern BI tools, meaning that the practical use of advanced analytics was extremely limited.

Finally, the lack of confidence in the accuracy of data meant that it was difficult to share data effectively between different partner agencies without a burdensome amount of data preparation taking place beforehand.

## The project aims

WODA aimed to develop a central, integrated data insight service. Its ultimate ambition was to spearhead a service redesign led by the insight gained by analysing demand, associated costs and defining outcomes. It would use accurate, up to date and reliable data to visualise, measure and model the impact of its activities on the community, delivering new insight on the best allocation of activities, interventions and costs.



## How VIQTOR DAVIS was able to help

WODA appointed VIQTOR DAVIS to help build a proof of value case for a data sharing exercise, aimed at demonstrating the possibilities, driving engagement with WODA's services, building credibility and generating momentum for the insights service.

**Adult social care was selected to be the first proof of value case. Adult social care combines data from numerous different sources, including Age UK, Worcestershire's Acute services teams, the Domestic Care team and Worcestershire Telecare.**

The dataset used for this proof of value included a number of common data quality issues such as missing values, values in the wrong field (for example, a phone number in the email field), different variations of the same name (for example, Mr A Ahmed and Ahmed Ahmed), misspellings, different casing, email / phone number validation and duplicates.

VIQTOR DAVIS's expertise was deployed to design the proof-of-value solution that featured marketing leading technologies, Experian's Aperture to address data quality issues and Gospel Technology's distributed ledger offering to manage the secure sharing of data.

The data is imported as a series of CSV files via LedgerBridge into a secure Gospel platform. Within Gospel a series of watchers trigger the Experian Aperture API to start a cleanse / validate / enrich workflow. From there the data is exported either to Outsystems where a role-based view is generated for Frontline workers or to Power BI where datasets are aggregated and summarised.

As part of this proof of concept VIQTOR DAVIS was able to demonstrate various transformations and validations, for example:

- Checking that emails are correct both in terms of their format and also at domain level
- Telephone number validation based on country and carrier to ensure that each is a valid UK number
- Standardising data by transforming all characters to uppercase and removing noise
- Extraction of postcode



# VIQTOR DAVIS

DATA CRAFTSMANSHIP

Experian Aperture offers a rich profiling feature that enables users to quickly profile and analyse datasets. It includes a range of statistical tests such as common and least common values and formats, nulls, completeness, uniqueness and min, max and average values, all of which enable you to identify data quality issues quickly and easily. Profiling the data showed where the missing values were and identified missing values, mismatches and values that are supposed to be 100% unique such as NHS number or UPRN. This process enables WODA to easily identify where to start cleaning, standardising and validating data.

- Aperture Data Studio is a data quality management platform that helps business users understand their data and make it fit for purpose to support key business initiatives.
- Experian Aperture Data Studio enables users to ingest data from a variety of sources to bring together previously siloed data sets for a single customer view.
- For the most complete consumer insight available, users can cleanse this data and enrich it with their globally curated data sets.
- The platform provides an intuitive interface and workflow capabilities to validate, cleanse, de-duplicate, and enrich data from any source.

Duplicates are identified using blocking keys to create blocks of similar records to assist with the generation of suitable candidate record pairs for scoring via both standard and customisable blocking keys and rule sets. Cross-field matching enables matching across multiple fields of the same type to find potential duplicates. For example, there are three telephone number fields (home, work and mobile) the system can find duplicates across all three of them.

By bringing together data from multiple agencies commissioners are automatically able to:

- Identify domestic care service users who are using assistive technology by postcode
- Generate a list of domestic care service users by postcode who have recently had A&E visits, along with the reason for that visit
- Isolate clusters of A&E admissions from particular postcodes, so managers can identify the underlying cause, be it that more domestic care users live in those postcodes or that the provision of care in those areas is substandard

The Gospel platform is an enterprise database built upon distributed ledger (blockchain) technology, providing increased control over access to organisational data. This platform provides an immutable, transaction-style log of what data was accessed when and by whom. Given the sensitivity of the data, this information is invaluable.





## How this works in practice

**Mr Ahmed, an adult social care user is admitted to A&E. The workflow takes the NHS number ingested from the Acute CSV file and ultimately generates a notification of the A&E admittance to Mr Ahmed's social worker.**

Under normal circumstances it is not always possible for the disparate WODA partner agencies to share sensitive personal data in a timely fashion, even when the appropriate data-sharing agreements are in place to do so. This real-time yet secure notification system dramatically enhances the responsiveness of the different agencies in respect of being able to support Mr Ahmed's recuperation, both within A&E and also-critically- as he progresses through the different organisations en route to full recovery and a return to home.

Mr Ahmed's admittance into A&E also triggers a notification to the Reconnections service run by Age UK, informing them that he is in hospital and therefore his twice daily home appointments are cancelled until further notice, freeing up appointment slots that can then be allocated to other service users.

Other potential applications for this technology include: -

- Generating a single view of child, removing the issue of repeated decisions being made without access to all relevant information and enabling frontline staff to make better, quicker decisions.
- Identifying households in Worcestershire that are at risk of potentially needing longer term adult social care in the future.
- Identifying households committing fraud so that resources are no longer overly focused on reactive services, enabling early warning tools to be set up for proactive working.
- Increasing children and young people's engagements in the arts and culture, particularly those from low income backgrounds so that resources are optimised to maximise impact on the community.
- Using linked data and intelligence to drive improved health outcomes for populations, patients and services.



To find out more about how VIQTOR DAVIS can help you,  
call + 44 (0)1795 415 800 Email [info.uk@viqtordavis.com](mailto:info.uk@viqtordavis.com)  
[www.viqtordavis.com](http://www.viqtordavis.com)

**VIQTOR DAVIS**  
DATA CRAFTSMANSHIP