Sweeping Change:
How Technology Is Transforming Street Cleansing Services in Durham

Geoff Knight MSc

Environment and Design Manager

Durham County Council

Setting the Scene: Local Government in Durham

- Product of iteration
    - Organisational – LGR
    - Ongoing Policy change – Services are responsive
    - Ongoing Legislative Change – Services are responsive
    - Services iterate and evolve to adapt to the financial climate

Inhibitors to service digitisation in Durham

- Reluctance due to perceived cost
- Need for upskilling
- Previous projects that have attempted to go ‘too far too fast’
- Time required for implementation
- Capacity issues can mean digitisation is a distraction from boots on the ground, rather than mission critical

Durham's Journey to Street Cleansing Digitisation

- Identification of need –
  - 2022 – Routes stored on paper or in the heads of operators/team leaders
  - Durham has 9,706 miles of road channels to sweep, and 6.7m2 of footways
  - Recording of work was on a 'areas/streets visited' only basis, in paper form.
  - Clear lack of data was identified, and was also identified as being time consuming to gather when necessary (FOI's etc)
  - Poor service resilience due to routes and route related issues relying on local knowledge, with minimal mapping and no electronic recording.

Durham
County Council

Isolation of specific requirements

- Routes need to be optimised around the county, depots and tipping infrastructure
- Improved visibility of route information for staff
- In-cab device that minimises manual input but provides maximum information
- Needs to allow us to display key route specific information (risk assessment etc.) easily in a manner that staff can understand quickly
- Need robust data that allows us to improve customer awareness of the service offered, challenge any false claims, and continually develop service.
- Needed a cross-platform system – 25 sweepers in fleet

Engagement and Development with Integrated Skills

- The Ask -
  - Route optimisation exercise to:
    - Capture existing routes that are either on paper, or anecdotal
    - Collate all routes from the 4 operating depots and map tip off points etc
    - Undertake optimisation exercise to ensure the service is operating as efficiently as possible
  - A system that can:
    - Track sweeper movements
    - Allow the driver to input simple data with minimal distraction (parked cars etc)
    - Created detailed reports of sweeper movements
    - Record sweeper status at all points during route (brushes up/down, spray etc)

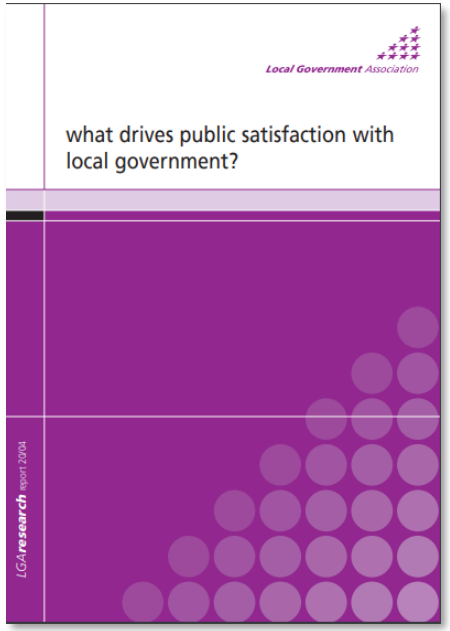
Benefits of the new digital system

- Powerful, fully digital reporting
- Realtime route progress
- Driver communication features, minimising the need for use of phones and therefore inefficiency and risk
- Fast responses to data need eg FOI, service requests, councillor requests
- Ability to feed into performance reporting with data to support KPI’s
- Collection of good robust data to inform continual service development
- (side benefit) telematics data available for incident investigation and driver protection

Durham County Council

Benefits of new system

- A system that helps to facilitate a perceivable improvement in local service can only improve public confidence in Local Government Services.



Implications for the LGA

The research highlights some key challenges facing the Local Government Association (LGA). The first is the need to formally agree, collectively, not only that the problem of poor perception exists, and damages the credibility of local government's arguments, but secondly that **collective** and **focussed** action is vital. While much has been achieved in the last seven years, only a radical shift has any chance of improving local government's reputation.

The obvious areas for focus in terms of building reputation among local communities are:

- streetscene and liveability services;
- communications - explaining effectively what is being delivered and how to get it;
- contact - exceeding expectations on responsiveness, empathy and getting things right first time; and
- perceived value for money, explaining clearly where money is going.

If local government collectively agreed to focus on delivering these services/aspects to a high standard, its reputation would improve.

Durham County Council

Areas for development of the new system

- Ad hoc rerouting optimisation-
  - Route disruption re-optimisation potential
    - If driver called away to ad hoc job such as clearance of spill or RTC, re routing could address optimal route after incident to realign cyclical route.
    - Allow for service resilience in case of staffing issues on high priority routes – integrating two rounds on a temporary basis.

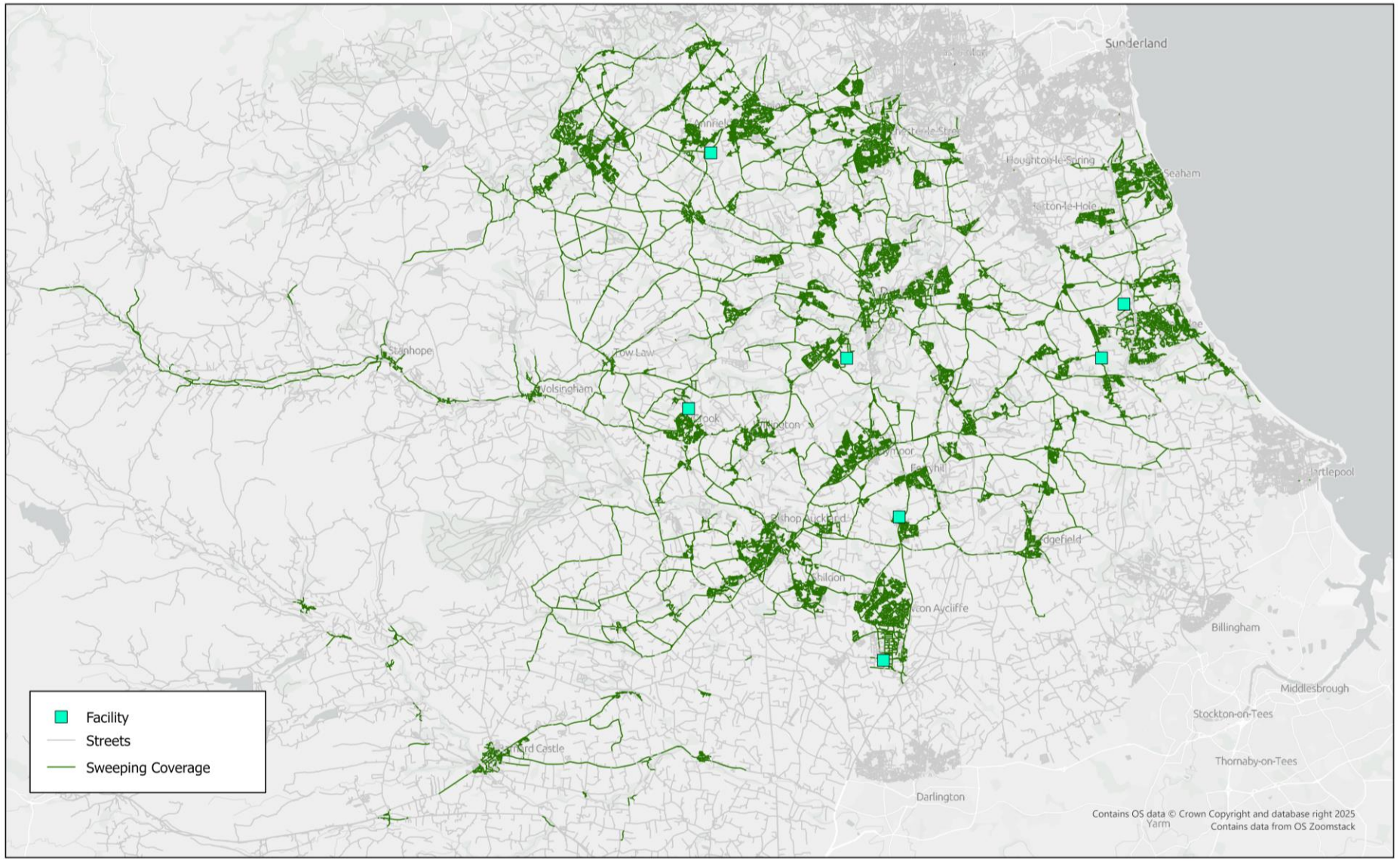
- Implementation has taken longer than expected
  - Due to navigating the integration with Manufacturers CAN and individual IT requirements.
  - DCC is the ‘guinea pig’ and so this is entirely acceptable.

Durham County Council

Implementation so far

- Route optimisation is fully complete, and showed some inefficiencies that have been addressed
- Base mapping allows for iteration and review for new developments being adopted
- Driver and team leader training for the system has commenced across the county, with ongoing support
- The System itself has largely been built for us, and is still in implementation phase, with ongoing testing taking place.
- However, telematics have now been installed on X machines, with in cab devices due to be fitted shortly.

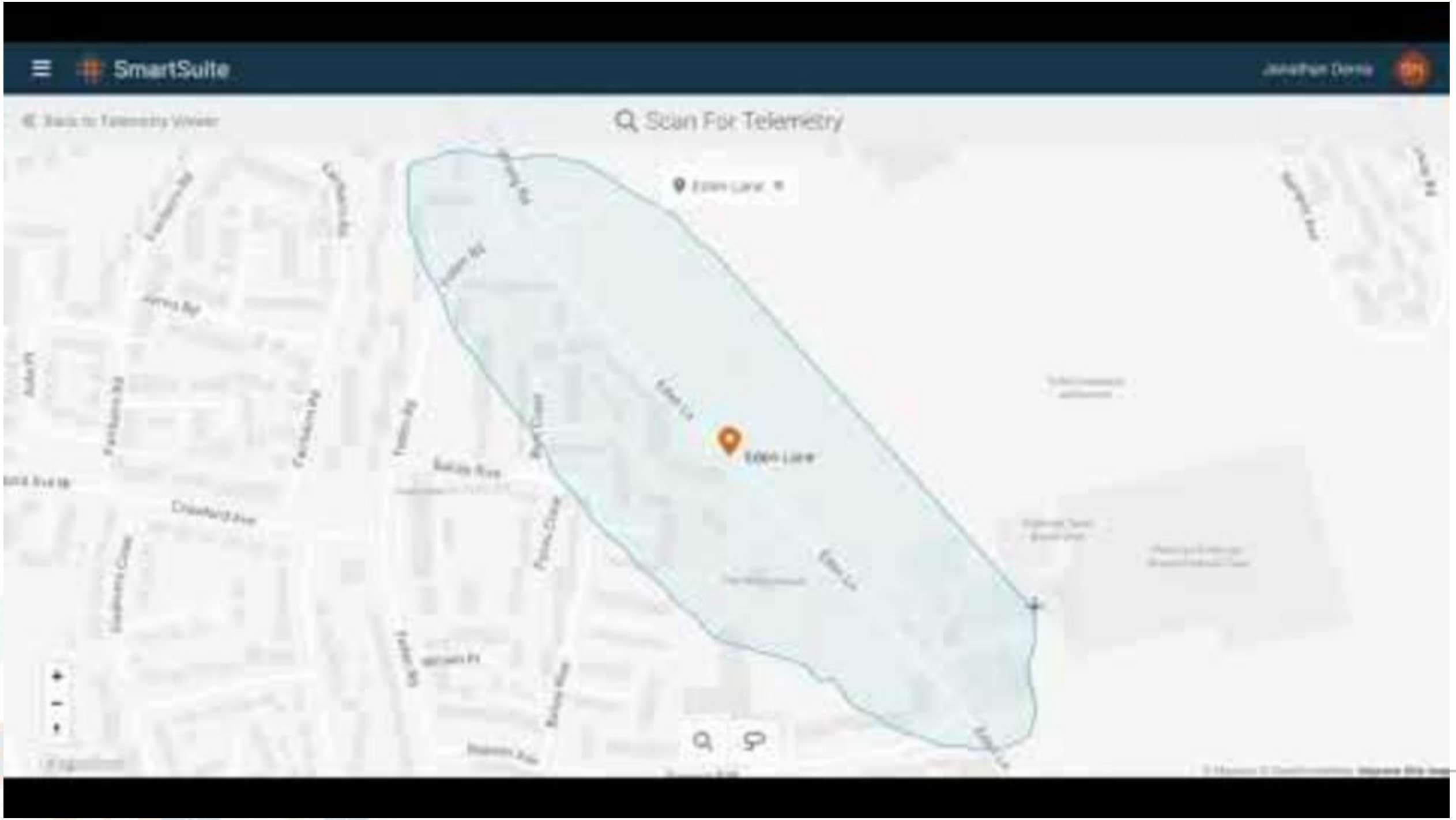
Durham County Council


Facility
Streets
Sweeping Coverage
Sunderland
Houghton-le-Spring
Seaham
Peterlee
Stanhope
Tow Law
Wolsingham
Crook
Bishop Auckland
Shildon
Newton Aycliffe
Billingham
Middlesbrough
Stockton-on-Tees
Thornaby-on-Tees
Darlington
Hartlepool
Ridgefield
Contains OS data © Crown Copyright and database right 2025
Contains data from OS Zoomstack

Challenges and Lessons

- Route optimisation went very smoothly- IS teams attended on site and manually inputting mapping data with drivers and team leaders.
- Engagement with Manufacturers
  - Access to CAN required for some vehicle data – some manufacturers were reluctant to engage
  - DCC's buying power proved largely persuasive, with Scarab, Hako and Bucher all coming on board, despite Hako and Bucher having their own systems for single manufacturer use.

County Council


SmartSuite
Back to Telemetry Viewer
Scan For Telemetry
Eden Lane
Eden Lane

The future is bright, the future is digital

- Real end goal of digitisation is fully integrated systems across service areas
- Jobs management needs to integrate with asset management, particularly for cyclical works
- Reporting needs to be more robust in its mechanism, integrating with asset and jobs management, but also preventing duplicate reporting and nil return reports such as complaints around land or duties outside of council remit

Aspirational next steps for digital expansion

- Litter picking
  - Route optimisation
  - Asset tracking (full bins and time scales, along with route soiling rates)

- Similar technology to our sweeper programme could be applied to Grass cutters, and integrated with asset management software to coordinate works and provide fast reporting
  - DCC currently receive over 3500 grass cutting service requests per year

- Cyclical Horticulture works
  - Shrub and flower bed maintenance routes
  - Hedge maintenance
  - Wildflower and biodiversity site maintenance – integration with other disciplines

Durham County Council