

On the road to digital transformation

Steve White explains how council highways departments can break free of existing data silos and help make it happen

Local authorities put a great deal of time and money each year into maintaining and developing the nation's highways and surrounding infrastructure. There is much to be gained from coordinating activities that help keep these assets in optimum condition and informing the public of work intended and/or completed. Think of the benefit, for example, if green spaces teams could collaborate with highways departments, not only to plan more aesthetically pleasing road schemes but also help with their ongoing maintenance.

Unfortunately, the reality for many is that individual departments and service areas continue to work in isolation, drawing on their own siloed data and relying exclusively on their own teams of people.

Barriers to transformation

Departments tend to have a narrow focus on their own area of activity and responsibility. While they may desire to utilise a broader set of information to improve their decision-making, there are a number of barriers in the way.

First, the software applications used by individual departments are, typically, specific to each service area and may require

specialist knowledge to use effectively. They are also generally locked down via account profiles and permissions, and incorporate different user interfaces. All this makes it difficult for other departments or users across the organisation to access and make use of them. This, in itself, limits knowledge-sharing, but it also makes cross-training and skilling of other users across the organisation challenging.

These departmental applications rarely incorporate mechanisms to facilitate data sharing on a real-time basis, and departments themselves can be very protective about 'their' data. With data 'locked' within such silos, and with limited or non-existent ways of sharing it in real-time, opportunities to utilise information across departments to maximise efficiencies and transform service delivery are lost. It can also result in multiple copies of the same or similar data being maintained across the organisation, thereby wasting time and effort that could be better deployed in other ways.

Having a common data set would enable multiple departments to make the most of each other's data to make better decisions and improve highways maintenance

activities. For example, by combining data relating to gullies, roads, arboreal services and historical flood data, authorities could compare historical events with the predicted impact of leaf fall and tree debris. This would help identify and optimise gully cleansing activity to minimise future blockages and flooding.

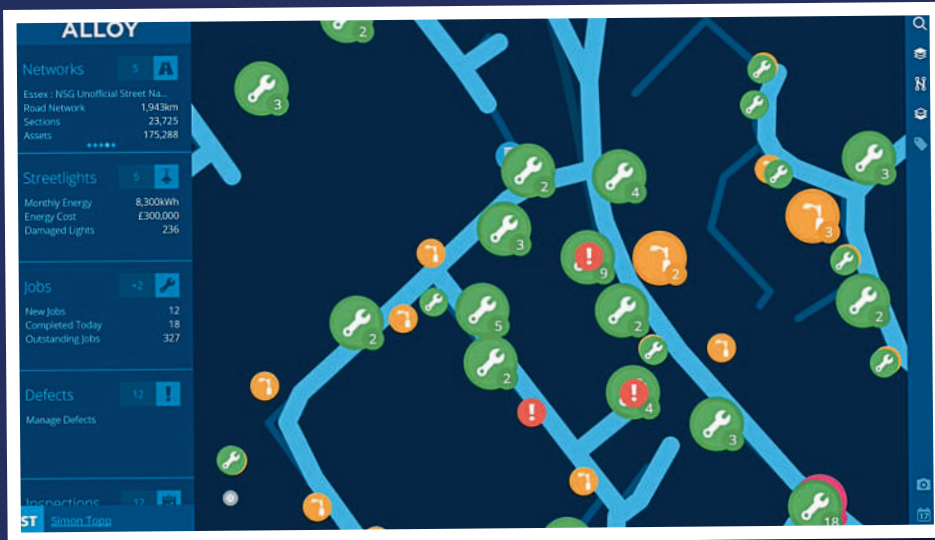
Finding a way forward

So what's the answer? How can those responsible for highways and surrounding infrastructure across the UK start to break down data silos and connect teams to help drive digital transformation?

Ultimately, it comes down to better use of technology, processes and people. One particular way in which businesses can break down data silos and connect teams is to adopt a common data set and single application across all service areas. This means data is shared and can be layered and reported upon to generate forecasts, spot trends and institute preventive measures.

By having an open Application Programming Interface (API), data can be shared between different systems to ensure efficient end-to-end processes are implemented. There is only one version of





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the truth, and multiple sources of the same data do not need to be maintained across the organisation.

Additionally, using a common mobile and desktop User Interface/User Experience (UI/UX) and a common way of leveraging the application, cross-skilling and deploying resources is made quicker and more efficient. Allowing data to be augmented in this way across different service areas brings greater insight, resulting in greater value to the organisation and its customers.

The Digital Future

Many organisations are trialling IoT and sensors that provide a wide variety of point solutions such as air quality, noise, temperature, asset condition or fill levels. These are effective as far as they go but, typically, only represent a small part of the

story. The danger is that they simply end up as additional silos of data and information that are not available to the wider organisation.

In order to support better cross-department decision making, the data from a wide range of IoT devices needs to be assimilated into a single application that allows users across the organisation to see and make decisions in combination with other data sources and multi-departmental activity.

We are now seeing more local authority departments, including highways and infrastructure teams, looking to deploy multiple sensor types and combine their data with other information to make smarter decisions. This ability to trigger specific activity based on combining the results of multiple data feeds means that new insights

and efficiencies can start to be realised.

The potential to support cross-departmental ways of working and benefit the maintenance and development of our highways infrastructure long into the future is clearly ready to be realised. Highways departments need to take note, and adapt their working practices to take full advantage.

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With IoT sensors now being trialled by many organisations, the need for data assimilation and integration becomes ever stronger



By combining data relating to gullies, roads, arboreal services and historical flooding, authorities can identify and optimise gully cleansing activities to minimise future flooding from blockages caused by leaf fall and tree debris

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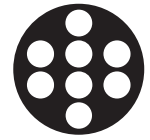
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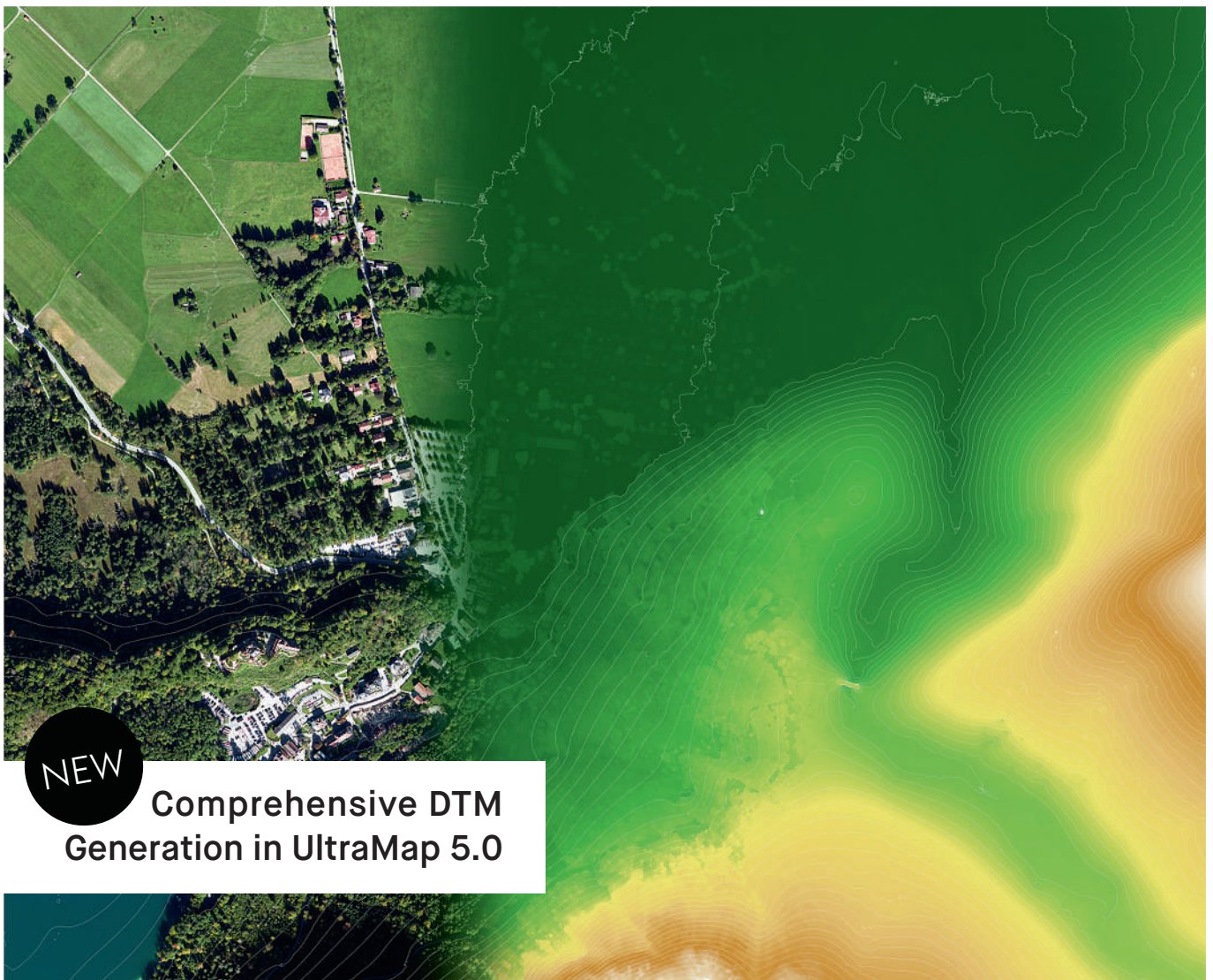


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