DCIA Dissemination Event: Insights and Updates from the DCIA pilots

During this second DCIA dissemination event, attendees were able to hear updates from all eight of the digital asset management pilots, with clear progress having been made on all sides since the last event in June. Dejan Bojic, DCMS, introduced the session by thanking everyone for their time and commitment to the DCIA project, and expressed a hope that delving into the DCIA pilots would "spark good conversation and good collaboration".

"Fundamentally if we are to boil this down to a simple definition" Bojic said, "it's all about finding the right location for the roll out of advanced wireless equipment in the future" with a significant focus on public and private collaboration

At its heart, DCIA is about processes – "making them easier, faster, making them digital, streamlining those interactions and processes, ironing out any kinks, and minimising friction between the public and private sectors".

The updates provided by the pilots today, Bojic explained, would show how two of DCIA's main objectives are being fulfilled: development of public sector expertise - specifically around data management in respect to assets for the rollout of wireless networks - and developing relationships between asset owners and industry.

One key takeaway from Bojic's opening comments was the sense and degree of collaboration happening between the eight pilots, representing 44 separate local authorities. DCMS have always wanted to see a high degree of collaboration, with

everyone working together and Bojic observed that “pilot participants are collaborating with each other on a daily basis…and creating a momentum for future adoption”. This sense of momentum is backed up by the burgeoning early adopters group (EAG) that follows and learns from the pilots. Five more regional and local authorities have joined the EAG since June, bringing the membership up to 21 regional and local authorities. Bojic was keen to emphasise that this is an open door group and encouraged attendees to spread the word to their peers.

Three months ago, the pilots were all in the data discovery phase and it was confirmed that this milestone was now fully complete. “We are now in the thick of platform and data integration” Bojic updated, which is due to complete in one and a half months time, before the focus shifts to executing test cases. This dissemination event therefore is about sharing the learning and dissemination of best practice to date. “We always wanted to focus on sharing knowledge and experiences,” Bojic said, “which is why these events are important”.

The pilots were paired up to present on a number of key topics all focused on the stage of data delivery. A notable change from the June event was that this time, many local authorities were joined by industry and platform providers, showing very clearly the close positive relationships being developed:

Lessons learned through the data discovery phase - co-presented by North East (Janet Ross) & West London (Finn Kelly)

Janet Ross, Delivery Lead for the North East DCIA pilot opened the session, with an explanation of how all the pilots have a deliverable to capture lessons learned on an ongoing basis, to not only inform their own work but to enable best practice to be shared with the Early Adoption Group and any other future projects. The focus for their presentation therefore would be on the activities that have gone well, those that didn’t unfold as expected and a reflection on what could have been different, “with a reality check on control of the variables”. We are capturing lessons as good practice and to share with others. We’ll cover what went well, what didn’t, a reflection on what could have gone different.

Ross went on to introduce the North East pilot which is made up of the North of Tyne Combined Authority and five local authorities with three external partners. As the most northern part of England, the region has significant size and scale which covers both very urban and very rural environments.

Perhaps the key challenge they faced during the data discovery phase was the complexity of bringing multiple organisations together. Ross went on to illustrate the scale of the task: “we’re collecting c.160k street lighting columns, c.1400 public buildings & schools, c.160 CCTV columns and public land across c.2100

square miles". To add further complexity, the pilot is also operating within the context of four PFI contracts. "Many learnings are obvious" Ross acknowledged, "but the solutions aren't always straightforward".

Data extraction – "We significantly overestimated the simplicity" and ease of getting data out of the source systems, Ross acknowledged. Finding the people who owned the data was straightforward but data wasn't always up-to-date and the capacity needed to extract the data was the real challenge; pushing their project plan out by about eight weeks.
What could have been done differently? Ross suggests building a good understanding of systems and stakeholders very early in the project: who owns data, where does it sit, and who manages it? Involving data owners as soon as possible will allow you to quickly understand challenges and complexities, any capacity issues or local nuances to the data, helping you to agree what is in - and out - of scope. It was observed that a general lack of awareness around the project meant there was little urgency around processing the project team's requests. Simple and focused communications inside and outside the organisation can play an important role here, not only raising awareness of the project but of the requests likely to be incoming. Pragmatism is also valuable; "set realistic expectations around how long things will take" Ross concluded, "and don't underestimate bringing different organisations together. It's not easy and it does take time".

Data Cleansing - specifically here, Ross addressed the process of taking data from various organisations, converting it into a format that can be uploaded onto the platform and identifying any gaps in mandatory data attributes. The North West pilot split attributes into 'mandatory', 'nice to have / recommended' and 'other'. Ross noted that often the data you're receiving has been collated for an entirely separate reason, meaning the data will certainly not be in a neatly aligned format that can be uploaded into a platform. Data needs to be realigned to get it into a prescribed format and this is complex; in some cases the pilot received manually mapped data in separate templates, in others direct access to source. This creates an immediate challenge but also poses issues for repeatability; can you ensure data will be provided in the same format each time? Another challenge the pilot encountered was naming conventions, with differences across all five local authorities.
What were the key learning points? Ross advised attendees to work with data owners to understand how flexible the system outputs can be to ensure maximum alignment between outputs and the format needed for the platform. "Be prescriptive and specific about mandatory data attributes" Ross suggested, "so owners are focusing primarily on those elements". This can also aid consistency across future updates.

Data accuracy – the pilot achieved 94.6% accuracy of the mandatory data through the data cleansing process. Again, the key learning here was the recognition that the data being provided will originally have been captured for different purposes meaning you will encounter gaps and anomalies. It is important therefore to be realistic: you will need to go through iterative cycles. A key recommendation therefore was to think carefully about what the mandatory data really is. "Don't waste time capturing data that isn't material for MNOs to make an initial suitability assessment" Ross advised. Do however, consider how you can work with data owners to fill gaps and update systems with those mandatory data elements. This will pay dividends when it comes to replicability - you want as complete a data set with as little manual intervention as possible.

PFI contracts – "There was an assumption" Ross stated "that in situations where a PFI contract is in place, there is no option to install kit" and the pilot had to decide whether to include these assets or not. However, this would have meant removing 130k of the 160k assets from scope. Ross highlighted that "not all PFI contracts prevent the installation of equipment on columns and there are options to work with contractors to vary the scope of works, which could add more flexibility on the use of street lighting columns". The key finding for the North East pilot was that these options do not necessarily add burden to the local authorities. As a result of support from DCMS, they managed to eliminate the majority, if not all, of the initial concerns that their local authority teams had, meaning all assets remained in scope.

Comms – a robust comms programme is important to ensure various layers of the organisation understand what the project wants to deliver and what each team's role is. "We're six months in and still finding people who don't know what is going on" Ross reflected, stating that "there is no perfect solution to this but lots of examples from across the pilots that can be re-used".

Fin Kelly, West London Alliance then took to the virtual stage, explaining that the West London boroughs operate as a group around digital infrastructure. There is very strong collaboration between the seven boroughs and the alliance is looking to replicate the success they have had with fibre wayleaves, for mobile infrastructure. As a result, all the boroughs are engaged and supportive of the DCIA pilot.

WLA's starting point was to gather asset data to establish sites for small cells and macro sites. Across the seven boroughs they have 137k lighting columns, 3 PFIs, 9,000 km roads, 3,200 bus stops, 95 tube stations, 49 high streets and 2 airports. They also have five boroughs who are engaged with supporting small cell deployment and who the WLA already has a concession agreement with. As a

result, there is a base level understanding in the boroughs around small cell type technologies and how to deploy them. They are now exiting those concessions and moving to a seven borough Open Access model, to provide a market place in West London for operators to come, invest and build up 5G infrastructure across all boroughs as the market moves and technologies change.

Kelly went on to outline their key learnings:

Volume of assets - the sheer volume of assets across the seven boroughs created "quite an overwhelming task" to map all of those into a database that could be effectively managed. To manage this, WLA has closely engaged with the market to identify where their priority areas are, enabling them to focus their data collection on targeted, smaller scale geographies. Alongside that, they've spoken with the boroughs to help them understand the benefits to them and why they should open up and provide data. The end result is a more nuanced understanding of which parts of the boroughs are likely to see the next deployments of small cells. This in turn has helped to frame conversations, enabling them to get to the level of detail of naming specific businesses that could benefit from the connectivity.

Local authority sponsors - "we are lucky to have sponsors in each borough" Kelly explained, "who open doors and facilitate data sharing". To further secure corporate buy-in, the pilot runs a steering group that enables them to get specific about the benefits connectivity can bring and who in West London will realise those benefits.
Plan for personnel changes - One key challenge with engagement activities is that it is a very manual process and Kelly identified that changes in personnel across boroughs and teams can take you back to a starting point. The impact of this is great when the pilot is dependent on people working in teams and taking actions to source and provide data. Kelly recommended that the project team keeps on top of who is doing what and flags early on when people are leaving or teams are being reorganised. He acknowledged that keeping new people up to date can be an exhausting process for the project team and suggested that standard onboarding material could be a way to reduce that burden.

Open and semi-open data - Kelly spoke about the London Data Store which provides a huge amount of data that they have been able to tap into, reducing the data collection burden. He advised that projects take the time to talk closely to stakeholders to understand what has already been done around mapping, and to explore what portals and data hubs already exist. "It is well worth investigating; we were quite surprised about what is already available", Kelly summarised.

Data enrichment - one thing the West London pilot has done is explore how they can "enrich existing data rather than collating lots of very complicated data sets

together". A specific example Kelly gave was fibre indexing. They don't necessarily need to input all the data around where all the fibre ducting is, but what is helpful is to use that data to enrich their data set, for instance by flagging which of their assets are proximate to fibre indexing. "We've made good progress here", Kelly observed, sharing that it had been a good shortcut for the pilot. You don't need all the data in your system therefore, you can be strategic in taking inputs from other data sets to enrich yours.

Key takeaways for the audience were:

- Have a clear purpose that is communicated internally initially and ongoing to secure support
- Be clear on the scope of assets to be included and identify issues early on
- Engaging with the market can help you to target your efforts
- Have the project team engage directly with the right people within the organisation. Try to remove as many layers in the comms chain as possible to improve depth of understanding on both sides
- Corporate ownership is key; but so too is having a dedicated point of contact for data collection
- Be clear on what data is needed – focus on mandatory data rather than recommended or other data
- Be prepared for debate – both within the project team and with your wider stakeholder group. This is a new endeavour so resistance is to be expected – be prepared for that and be flexible, adaptable
- Changes in personnel can disrupt data supply chain into your platform: consider preparing standardised briefing materials to minimise delays
- Explore open and semi-open data sources to avoid reinventing the wheel
- Append attributes to assets rather than getting people to share all their data, as a quicker way to enrich your data
- Continuously review project progress and encourage learnings

Turning to questions, Bojic asked both presenters: when you are selling in the pilot internally, what benefits spark engagement? Ross replied: "there is a perception that everyone is 100% onboard with what we are doing and understand the deliverables. They really didn't". She went on to explain that early on they developed a high level overview of DCIA: what it hoped to achieve and that the primary goal was to get more people connected across the region. Addressing digital exclusion has been the key message therefore; to make the digital footprint broader and wider in order to tap into all the benefits associated with that. Ross however also highlighted the importance of tailoring your messages and benefits to the different teams you're engaging. "People in a planning environment aren't that bothered about digital inclusion, but they will be interested in how your work can streamline their processes" she explained.

Kelly echoed Ross' words, sharing that they had encountered similar challenges. "It's important to show the value of this part of work and how it leads to the benefits we talk about" he shared. "Look at where there have been previous successes, for us the fibre programme is the first phase and we are positioning this as the second phase. Making that link for us has been quite important, showing how it builds on a previous successful programme". This sense of synchronisation and alignment between other rollout programmes, showing how it is all part of the same broader package, can be really impactful.

Bojic's next question looked at what happens once you've collected the initial data: how do you get the budgets and resources in place to maintain data?

"We are looking at this now" Janet revealed, exploring what resources would be required beyond the pilot phase. The Benefits Realised process is a key part of that, and the pilot is working hard to understand the benefit of streamlining and making processes more efficient.

This is hard work and time consuming and that does create a cost in the local authority" Kelly agreed, stating that they do need to understand how they can streamline the data collection and maintenance process. Their focus on understanding where the demand is and being very targeted with their data collection as a result, is part of that.

Case study: finding a location for a macro site - co-presented by West Berkshire (Lynn Wilson) & West of England (Antony Corfield) with MBNL (Will Osborne) Vodafone (Chris Jefferies) and Asset Market (Alana Archer).

Reflecting the progress that has been made across all the pilots, several of the pilot presentations were case studies bringing to life exactly how the asset management platforms can be used. Corfield, West of England Combined Authority, set the scene by explaining they were going to talk attendees through a Notice to Quit (NTQ) scenario and would be showing both the "as is" scenario without a data platform, and how the process could work with a platform.

Osborne began by explaining that an NTQ is where a notice is issued by the landlord that existing equipment needs to be removed. This could be as part of a lease renewal process or because the landlord is pursuing redevelopment. The key point to note is that this is not a scenario where coverage is being improved or expanded, the aim here is to maintain existing coverage, and find another site that enables that. Removing a macro cell from a cellular network will cause a great deal of disruption to the network, potentially creating not spots and / or changing patterns between different cellular generations.

Ideally therefore, you need to relocate the site as close as possible to the original, ideally within several hundred metres. “The optimal location is the original one” Osborne explained. In some instances the redevelopment may mean you only need temporary site access elsewhere before returning to the original site, but in the worst case scenario, you are looking for a new site altogether.

The search is driven by the technical requirements; the new site must fit in with the cellular pattern for all the types of technology being deployed. There are a number of very specific requirements therefore: height, clear line of sight for the transmission link, a fibre connection, and the building has to be structurally sound and able to support equipment. There may be additional complexities to consider, for instance restrictions around conversation sites, and for the planning process it is also necessary to demonstrate why other, alternative options, have been discounted.

Today, getting all that contextual information is time-consuming and manual. Subcontractors are engaging to search within a nominal area and will search the land registry to then identify relevant landowners. With DCIA Osborne explained, they will have a “one stop shop that provides the exact information we require – making it much quicker and easier to engage with the local authority or tenants involved in sub-leases”.

Critically, DCIA will also provide infrastructure providers with a single point of contact that they can engage into a legal agreement with and that can then be discussed with the planning officers. “The principle of DCIA is that it brings all this complexity of process into one site and improves NTQs and new sites”. This should not only make it easier to access assets, but will also help industry discount potential sites much quicker. If a building is not available - for whatever reason - it is extremely helpful to understand that upfront. That knowledge will also make it easier to go through the planning process and engage with the community, speeding up not only the design but also the planning stage.

Corfield concluded by stating that the platform is just one aspect of DCIA that can help this process, with the work around PFI contracts and standards also playing an important role. The critical nature of internal communications was once again flagged; in this scenario Corfield observed that it is really important that all departments understand that NTQ scenarios are not about improving or changing - they are about maintaining the status quo.

Archer and Jefferies then ran a platform demonstration to illustrate how the West Berkshire pilot is helping to streamline the process operators undertake to acquire and design access.

Using the platform, they selected a site in Thatcham as an example. “We got a team out there, to walk through the site and see what options there are,” Jefferies explained, before Archer demonstrated how with the platform they can use a digital map overlay to see what assets are available. Zooming in she was able to show what telecoms masts already exist in the vicinity and how each of those assets can be opened up to share what is available in the immediate vicinity - street lights, buildings, land, traffic lights etc.

A street map view as well as a satellite view enabled us to see the broader area, what was around and how that might affect the asset itself. For instance, the train station was identified as an asset close to the existing site, but that had pylons that would need to be navigated.

Within the platform we were shown how you look through contextual layers, such as sites of scientific interest with associated planning constraints, listed buildings, flood zones and so on. From the platform you can then with one click contact the asset owner, with the ability to send a tailored message depending on whether you want to make a leasing, availability, site suitability or some other type of query. Assuming those initial conversations - all conducted through the platform - go well, you can then progress to applying for access.

The application will be prepopulated with asset and applicant info data with the flexibility to add further pertinent data such as the mast height, commission data etc. It is also possible to upload a master agreement here which provides the standard agreement between the authority and the applicant, as well as uploading design drawings, site photos and other supporting documentation. As Archer explained, “ it provides ease and transparency, with everything in one place”.

The platform also offers an audit trail and clear transparency around who is involved in which stage of the process, and how things are progressing. Approval groups – preliminary and final – are clearly listed, alongside their contact details, while a history tab stores time stamped documents, showing who has been creating the application and managing the approval process.

The demonstration was extremely impressive, with positive sentiment shared by the audience. Jefferies went on to explain the real benefits Vodafone sees from the platform: “from a design perspective, we can see multi-site details before we even get to the site ourselves. Coming to the legal process, this helps us get ahead of the curve, rather than starting a legal process from scratch and reducing legal challenges that cost us time and money that we don’t need to spend when we all want to achieve the same things. From the planning side, we can review all live planning processes and review in real time where every application is. It also

means we can easily show planning teams the process we've gone through and the sites we have discarded".

Jefferies was emphatic on the benefits he sees to the platform, highlighting the ability to select options faster, get into design drawings faster and empower both sides to rapidly review all options in a manner that is easier to manage and track.

Jefferies noted that " when we started this journey we had to strip out a lot of the information to focus on what makes our life easier. We looked at the bare bones of what we need functionally as a business to drive that seamless process that saves us time and effort".

There are plans to further develop the functionality: "we hope to be able to add certain things like the apex of roofs and the height of surrounding buildings" but it was clear that when it comes to NTQs, the platform would help to prevent coverage holes.

Bojic remarked that the presentation had really shown "the power of data" and observed that there are multiple platforms available and being used across all the pilots, all provided by start-ups and SMEs who are eager and keen to grow and develop their offerings. The result therefore was a "healthy application space for all involved". Inviting comments from attendees, a question was asked around whether NTQs provide an opportunity to reconfigure the network to replace a macro site with small cells instead?

Osborne explained that the network will have been designed with that macro site in mind and that replacing it with small cells has lots of complications as they can't provide the capacity of a macro site. The optimal solution therefore is to replace a macro cell with another macro. Jefferies went on to explain that they will always look to achieve the best case scenario first - replacing like for like. However, if that cannot be achieved then from a radio perspective it is possible to split the cell, for example to host cells North and South of the current site. Where that isn't possible they can look at deploying small cells.

Case study: finding a location for small cells deployment – co-presented by West Midland (Vasilis Papakonstantinou) & West Sussex (Nicola Scullard) with Virgin Media O2 (Pete Hollebon) Freshwave (Andres Cruz)

Hollebon kicked things off by explaining that VMO2 have deployed a "reasonable amount" of small cells over the past four years, mainly in London and the south east region, delivering customer improvements in the network. "For us a small cell

is typically a capacity solution" he explained, helping to provide additional capacity to the coverage delivered over a wide area by a macro cell.

Their primary focus today is on 4G small cells which they see as an enabler for 5G. The requirements for small cells are clearly growing, with the UK seeing up to 40% annual data growth. Small cell deployment therefore is designed to try to keep pace - and even get ahead - of this increased demand.

Today, small cell deployment is a three stage process. Echoing Jefferies' comments from the previous presentation, Hollebon explained that they are "driven by the requirements of the network: where are particular hot spots? Where is a macro struggling? Where are the ports of entry and where do we need additional capacity?

Armed with this information, radio teams assess the need for sites before looking at where contracts are already in place through their infrastructure providers. Typically, areas will break down into one of three categories: places where there is little dialogue with the local authority or conversations have totally broken down; those where dialogue is ongoing / working towards a contract; and those where a contract is in place / ready to deploy. The majority of engagements today sit in the "dialogue ongoing" category. Hollebon clearly made the point that with a limited annual budget for network improvement, they have to choose the areas in which to invest and will focus on those where they can deliver the end solution for the network and their customers.

"We share indicative demand with infrastructure providers to ensure they are kept up to date and are engaging local authorities and stakeholders" he explained, "and we hope local authorities can embrace our providers to deliver our joint goals".

Perhaps one of the key insights coming from Hollebon was that from a radio perspective, "the network is never stagnant, it's an ever evolving beast" They need to be agile and able to move with changing patterns and trends; meaning anything that can simplify and speed up processes will pay significant dividends.

Picking up the baton, Cruz shared his experiences of working with local authorities - Freshwave is currently engaging with 50 local authorities nationwide - which typically results in one of two scenarios:

1. Submitting a request for an asset and securing local authority approval in 6-8 weeks
2. Submitting a request for an asset and securing local authority approval in 6-12 months; this is where most local authorities are today

The difference between these two scenarios, Cruz suggested, is where local authorities have adopted an open access approach. He went on to outline the common steps they follow when working with a local authority:

Value Co-creation - local authorities will all be at different stages, from never having heard of small cells to adopting an open access approach and as experts, Freshwave see it as their role to help local authorities in their journey. The first stage therefore is engaging a digital champion - which could either be an individual or a team. This is important as they provide guided introduction and engagement with other stakeholders. Cruz observed that "non-exclusive access to infrastructure partners like us is not given by a single individual. We need to identify the different stakeholders – highways, planning, legal etc. – and engage them all. Every local authority is different but this step is key". External organisations, such as PFI providers, may also need to be engaged. This adds complexity but it was advised that having everyone on board at the start of the process and brought in to the value of enhancing connectivity, will make subsequent stages far simpler.

Smart Approval Process: Freshwave then provides the local authority and highways agency with different scenarios of how they can improve connectivity – all pre-approved by the relevant teams. "We answer all technical and planning questions, fully assess the suitability of the asset, provide the local authority with all the information they need and ensure they're involved throughout".

First Pilot Deployment: Deploying at a limited number of sites initially can be helpful to reassure the local authority that everything that has been agreed, is being delivered. "After that we will be ready as a team - Freshwave and the local authority together - to accommodate the demand from multiple MNOs" Cruz explained.

Adapting to change: the process should then become one of iterative review and improvements, as well as adapting to changes in the local authority. Working to ensure the local authority has visibility of changes in the technology or from the mobile network operator, further nurtures a sense of one team.

The key to success across all these stages is collaboration and a joint endeavour to benefit the local community and users.

Nic Scullard, West Sussex, then went on to outline the multiple benefits they see in working with a neutral host. "Constrained budgets means we don't have the resources to develop multiple relationships" she explained, "and a single point of contact with multiple MNOs feeding into that will help to streamline the process".

Local authorities often have to deal with multiple separate requests for the same site and it can take time to unpick these.

“The relationship we’ve developed with Freshwave is strong and collaborative” Scullard stated. “It ensures we can maximise digital opportunities; for us the collaboration between neutral host providers and local authorities is a critical success factor”.

Within each district and borough in West Sussex there is a digital lead - or champion - and these strategic connections work together to develop initiatives across the entire region. As with many local authorities however, those responsible for having these conversations will not hold responsibility for the assets themselves e.g. street lighting. The role of the digital team therefore is to bring the right teams together and also to ensure that any company they bring in can provide professionalism and technical knowledge.

West Sussex is a local authority with a PFI and they have been working closely with Freshwave to facilitate early engagement with the PFI provider and co-develop solutions within the limited scope of the PFI.

Scullard placed particular emphasis on one element of local authorities that she felt is often overlooked by industry: they are political organisations. “Local authorities need to understand their local context and the appetite to roll out small cells across the region”. She continued: “this may need policy changes and elected members buy in which will take time. In West Sussex we had an MOU from 1999 that said no mobile equipment could be deployed on assets. Once we understood that barrier we recognised that a new policy was needed; but to achieve that we had to secure political and strategic buy-in from the council.

One of the key ways in which political decision making can have an impact, is on timelines. Things like Purdah - the inability to announce anything that could have a perceived positive or negative impact on an upcoming election - cannot be circumnavigated. If a decision is potentially controversial then it is also less likely to be made in the build up to an election. These factors need to be understood and built into timescales.

Scullard concluded by noting that “the breadth of stakeholders from initial identification to deployment is vast and they all have a role to play in ensuring success. Starting early maximises chances of success and having strong relationships with a neutral host provider is a great foundation to be starting from”.

Vasilis Papakonstantinou, WM5G, then spoke about the value of open access agreements, something Cruz had previously referenced, which ensures that asset access is not restricted to any one party. The key objective of these agreements, he explained, is to speed up the deployment of small cells and improve connectivity in a region.

From the work WM5G has undertaken, they have observed that local authorities do not necessarily know how to make street assets available and struggle with four key things:

1. An initial commercial model to work from.
2. Having a commercial model that is subsidy control compliant – meaning the valuation needs to be fair and all providers have equal access
3. Duty of best value - local authorities need to consider not only suitable compensation but the social value that can be realised through improving connectivity
4. Ensuring compliance with the Electronic Communication Codes and ensuring valuations are validated against the market

Papakonstantinou reiterated that "our perception is that local authorities should aim for open access models to enable non exclusive, multiple agreements with small cell infrastructure providers". He went on to outline the process that local authorities can follow to achieve this: firstly, a standardised licence agreement should be produced and sent across to any interested parties. PFI contracts should be assessed early on in the process and the Department for Transport or PFI providers should be consulted as part of that. An asset's valuation should be determined, working with the highways department and WM5G have then found it is helpful if local authorities create a small cells toolkit outlining the process that industry will need to follow.

Once those initial foundations have been put in place, an intention for procurement, the Expression of Interest, can be published on the local authority's portal. The responses from different sponsors and infrastructure providers can then be assessed before progressing to legal agreements. "After that, it's time for engagement and introductions to the highways teams, planning teams and then to the local public teams" Papakonstantinou explained, "before detailed deployment methods are agreed and the infrastructure providers can move to the final deployment phase". Proactivity and open dialogue was heralded again as important, particularly with planning departments.

Cruz concluded the presentation by sharing the key lessons the two pilots have learned so far:

Have a digital champion – a single point of contact that industry can refer to when they have questions or requests

Deploy a smart approval process – this avoids duplication of effort as much as possible. New technology demands new commercial models and mindsets so implementing smarter processes can reduce, rather than add, to workload

Develop a single vision – if nobody is left behind then all departments in the local authority are talking the same language. If everyone is on board it's much easier for public and private sector to work together

Have pre-approved solutions – this increases the initial engagement especially with the highways team but it does reduce workload and speed up approval processes with local authorities. Experience in the pilots is that this can reduce official approvals to as little as one week.

Break down silos – every local authority is at a different stage but there will be other local authorities who have already walked that path. They have probably faced the same barriers, and asked the same questions. Freshwave - and more broadly DCMS - works hard to connect different local authorities to share learnings.

Develop a visionary approach – with improved connectivity, local authorities can then explore and consider what else they can do and what smart services can now be delivered.

Reflecting on the presentation, Bojic commented: "I love the way you portray the interactions between the asset owners, local authorities and the industry almost like a handshaking process between the parties. That's fantastic".

Managing the data pipeline from asset owners into data platforms – co-presented by Infralink (Sarah Eynon) & Wessex (Gary Littledyke) with Connected Places Catapult (Cara Navarro) & AssetHUB (Rob Leenderts)

Gary Littledyke, Dorset Council, opened up the final plot presentation by explaining that the two pilots would share their approaches to managing their data pipelines. Littledyke explained that the Wessex pilot's approach has a couple of guiding principles: firstly, having a structured deliverable set and secondly, the creation of a test case plan which is revisited and reiterated throughout the project. Everyone in the team understands what we're trying to achieve and daily stand-up-calls keep people focused and on track.

“We decided to adopt a two stage approach to data delivery to avoid boiling the ocean” Littledyke said. Their starting position was that a lot of the benefit would probably come from a relatively small number of asset types so they were very targeted in the data sets they looked to source. In particular they have brought in five types of public data sets, five sets of private data and five contextual data sets to ensure they “can see the wood for the trees”.

He went on to outline the public sector assets they have gathered:

- Weymouth relief road: an asset owned by Dorset Council. On it they have mapped 79 road crossings, 7,800 m of duct and 94 chambers
- Dorset street lighting: this is subject to a PFI which has added complexity when working with the provider and Dorset council. They decided to map the assets anyway for illustrative purposes to show how and where they might be useful, which may help with later conversations about securing access. There are just over 8k lights they mapped as part of this, which did entail some manual work to map exact locations
- Dorset council property assets: this makes up the largest data set, comprising 1,300 property assets with 55 different asset types from schools to car parks. Each data set has a range of attributes but Littledyke echoed Ross’ presentation from earlier in the day to try and avoid spending too much time trying to define exactly what assets and attributes you need. “We found that sometimes you just need to get started and pull in what you can get”. Further echoing earlier comments, he noted that for most of these assets, you’re looking at a secondary use which means that often the attributes which will be particularly valuable - for instance height - weren’t recorded when the data was originally captured. Wessex has explored making some assumptions about things like height which can be “good enough” and then clarified once an asset is identified as useful
- Weymouth is a town council which does not have any electronic asset mapping, meaning their assets are “hidden” to MNOs and supply chain partners. The Wessex pilot has therefore kicked off an initiative whereby parish and town councils are given the opportunity to make their assets available on a self-serve basis. To demonstrate the value of these hidden assets they have so far mapped public conveniences. The challenge is that there is no data available so mapping these assets is labour intensive, requiring a combination of desk research and clarification with the town council. A self-serve model is seen as being a sensible approach to scale without draining resources.

Rob Leenderts, AssetHUB, outlined the non-public sector assets they have secured from:

- Wireless Infrastructure Group: 1,800 mast sites across the UK that are shareable and have building rights on properties and lands owned by other utilities including Anglia Water and Scottish Water.
- Scotia Gas Networks: they provide gas pipelines in Scotland and the South of England have a large amount of abandoned gas pipelines due to repacing 5% of their piping each year. The original piping - covering about 10k miles in the UK - stays in the ground and could provide ducts for fibre. The pilot has mapped some of the suitable piping in Hampshire and Dorset
- Church of England Portfolio: the pilot has mapped 300 churches across the Dorset region and is looking at what attributes they can map
  Cornerstone - have 640 mobile masts with shareable infrastructure in the Dorset and Hampshire area
- Shared Access: an organisation that manages a clubs and stadia portfolio. This includes sporting areas, training grounds and even some sporting areas. The data initially provided 600 data points but once these were de-duped to account for say multiple football clubs running out of one ground, this resulted in 350 sites.

The contextual data they have loaded is growing all the time and examples presented included:

- Gaist Asset Confirmation Information: a company that drives around local authority areas and looks at road conditions. They capture a lot of video footage of the surrounding area through this process and using algorithms can then provide exact information on the location of street furniture, as well as making assumptions about heights of buildings and other assets. Wessex has been able to correlate this data against the public sector sets to understand how accurate those data sets are
- Dorset Council Future Developments data set: showing where they are planning to build new houses and business sites across the next 17 years, clearly highlighting future demand. Layering these data sets together can enable you to start to identify future not-spots.
- Areas of Outstanding Natural Beauty and Flood data: these can help to show the potential difficulty in deploying infrastructure in a certain location. Aerial photography data sets - Dorset Council has provided this and can help to provide infrastructure providers with a different view of a site.

Reflecting on the key learnings Littledyke noted that when he spoke at the Bristol event he'd declared "contextual data a gamechanger and this continues to be true – it's really bringing data to life and giving real insight". He also pointed to the engagement they'd had with wireless network providers and how this has proved fascinating. One word of advice was to not just focus on MNOs, Cornerstone and

MBNL: “there are others in the supply chain who have a view on this, such as the acquisition partners, that we need to be talking to”.

Perhaps one of the greatest learnings from Wessex however is the huge potential to uncover additional assets through engaging with town and parish councils. Littledyke concluded by saying “There are lots of areas where we need to provide coverage and if you can uncover these “hidden” assets this opens up a lot of new opportunities that are currently not visible to the supply chain”.

Sarah Eynon, Scottish Futures Trust, introduced the Infralink pilot, reminding attendees that their pilot covers four councils in the Tay Cities region. From day one however, the project has taken a national stance, considering the potential to roll out their approach to all 32 local authorities in Scotland. “ So we’ve looked at sustainability at an operational and management level from the start” Eynon explained. “We also want to ensure this is seen and used as an engagement tool. This isn’t the full data that will ever be required – but it is a tool to start the discussions and provide a display of willingness”.

Eynon went on to outline how Infralink had undertaken an 18 month discovery period prior to the DCA pilot, which has really helped to take them forwards, given the scale of their ambitions. Their main mantra and approach has been to use existing data and engage with organisations that already have funding and resources to collate this data. The project has therefore benefited hugely from Scotland’s Improvement Service, which is a data aggregator funded by all 32 local authorities in Scotland and the source of all of their asset data.

Eynon then introduced Cara Navarro, Data Strategist at Connected Places Catapult, who are responsible for managing the pilot’s data pipeline. Given the approach of using existing data, Navarro explained that the pilot has been able to focus a lot of time on working out what happens after the asset data is aggregated. The Improvement Service holds a number of datasets relevant to the pilot, including council asset registers, which hold buildings and land parcels that are publicly owned, and street furniture. Significantly, the service “also does the hard work of standardising local authority datasets into a consistent format, which meant we didn’t have to spend as much time restructuring and cleansing the data”. The data was also made available through an API meaning extraction of the data was fully automated. The pilot team did then manually transfer the data into their platform but acknowledged this could be automated in the future.

Navarro outlined their data transformation process which was based on the minimum platform data requirements identified by the platform partner:

- **Only assets are suitable for deploying infrastructure should be included**: this streamlines the search site process
- **All assets should have unique coordinates**: to avoid complexity with dealing with multiple assets in the same location
- **All assets must fit into a site tender's classification team**: meaning they must be classified as either rooftop, greenfield or streetworks sites
- **All assets must have a unique ID that remains persistent over time**: so if new data is added, no data is lost

The Improvement Service data made it easy for Connected Places Catapult to filter out unsuitable assets. Every asset was classified and they worked with Sitenna, their platform provider, to identify assets that could be removed because they would not be socially acceptable, for instance war memorials, and which would not be viable sites. The premise was clear: if the only assets listed are suitable for use, the process becomes much easier for all.

Navarro shared that while deduplicating assets was easy in theory, it proved to be much harder in practice because of later data uploads. To manage this problem the pilot agreed on a principle where they would always keep the asset with the most information. "We recommend close consideration of how to manage duplications and how this will be impacted by data refreshes" Navarro said.

Classifying assets as streetworks assets was straightforward but classifying assets as either greenfield or rooftops was a non-trivial manual task. They downloaded building footprints from OS for the region which enabled them to apply a simple logic: any asset that sat within a building was classified as a rooftop site. This method can be used to add information to assets, but is dependent on asset owners providing highly accurate coordinates.

Allocating a unique ID to each asset in itself is a simple task but critically, those IDs need to be meaningful to each of the local authorities so they can recognise their own assets. The pilot found that different local authorities often used the same site references to manage this, the pilot added official local authority abbreviations to each asset, ensuring every authority could understand what the data asset was, while avoiding duplication. The key takeaway therefore being to establish and maintain a consistent referencing system for your assets.

The two pilots have adopted a very different approach to data collection but both provided tangible learnings and actionable insights for other pilots and data mapping endeavours.