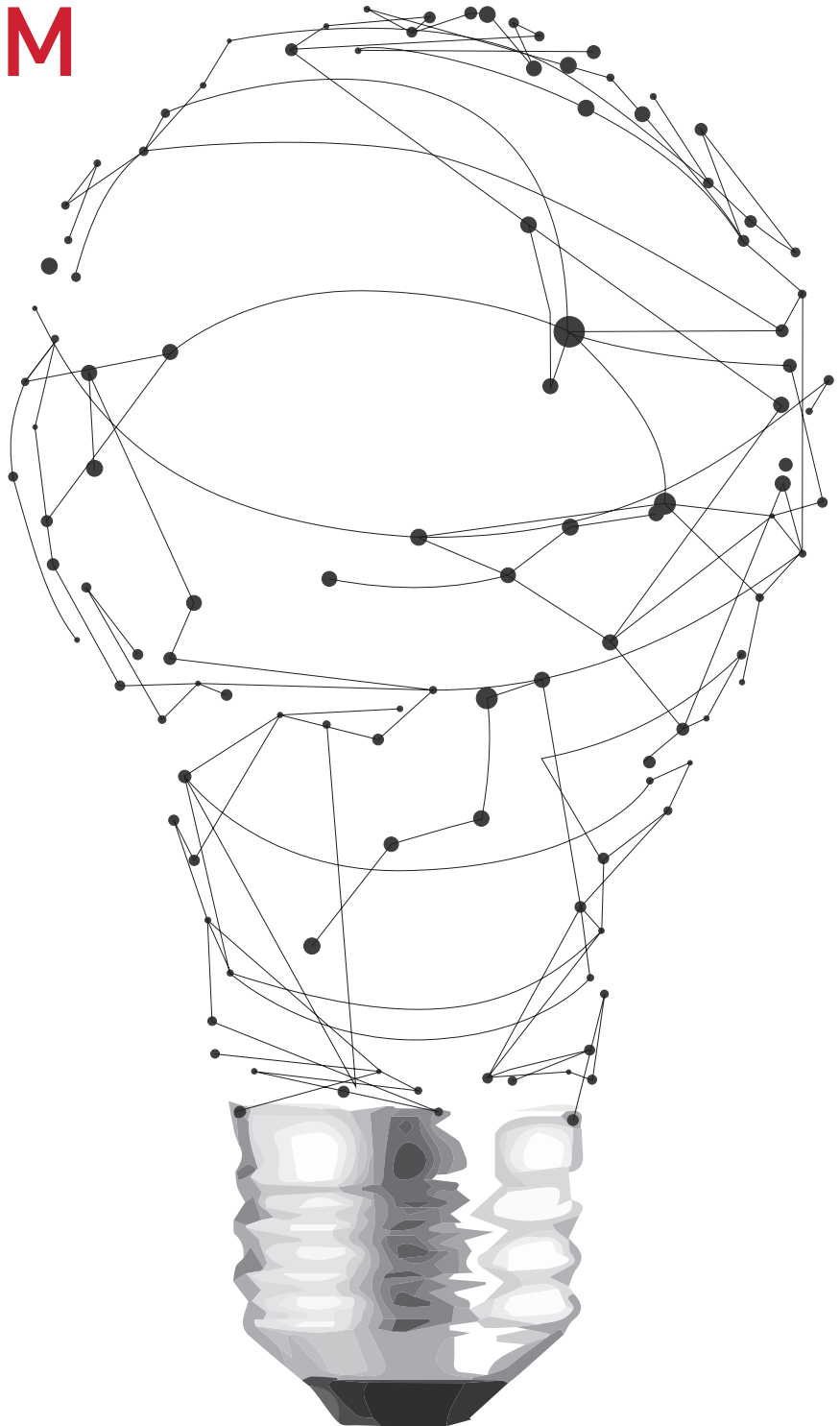


BRINGING THE
ALGORITHM
ECONOMY
INTO THE
PUBLIC
SECTOR





BRINGING THE ALGORITHM ECONOMY INTO THE PUBLIC SECTOR - SMART SERVICES AND EVEN SMARTER ASSETS

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In 2017, Lambert Smith Hampton (LSH) launched The Knowledge Network, a ground-breaking partnership with the UK's leading predictive analytics company Black Swan and data science specialists Mastodon C. Big data is changing the entire world around us and those who ignore this revolution will miss out on the opportunities it brings. By harnessing the power offered by big data, the Knowledge Network has the potential to fundamentally alter how the property industry advises clients and supports the public sector in meeting its challenges.

“Big data is the oil of the 21st century... proprietary algorithms that solve specific problems that translate into actions – will be the secret sauce of successful organisations in the future. The next digital gold rush will be focused on how you do something with data, not just what you do with it. This is the promise of the algorithm economy.” (Sondegaard, P. Big Data Fades to the Algorithm Economy. www.forbes.com. 14 August 2015).

Against a background of uncertainty, not least in relation to the impact of Brexit, the public sector is under continuous scrutiny to find savings and rationalise its estate.

Future population trends will shape service demands, and asset strategy needs to focus on optimisation of the estate, alongside rationalisation. Optimisation implies taking into account and finely balancing multiple factors. Doing so in practice requires a detailed understanding of these factors, and importantly, the interrelationships and correlations between them. According to IBM, 90% of the world’s information has been created in the last 2 years: this availability of data, coupled with major advances in computer processing and machine learning, provides the opportunity to move from blunt rationalisation to genuine optimisation.

The public sector has been on a trajectory towards collaboration and co-location for some time now within both local and national government, and has made significant strides, given in many cases how illiquid property as an asset can be seen. With the first pathfinder projects now complete and central government hubs in the pipeline, this approach will rightly continue to be high on the agenda and will see increasing numbers of physical transformations alongside the rhetoric. With an endless requirement to find efficiencies through a number of programmes, the bar needs to be pushed continually.

One Public Estate and Sustainability and Transformation Plans

The One Public Estate (OPE) Programme started in 2013 covering just 12 areas; it has now increased to include more than 250 councils to which the programme has awarded £21m (Cabinet Office (Apr 2017): “Progress on the government estate strategy”). By 2019-20, it is expected that the Programme will have generated 44,000 jobs, released land for 25,000 homes, raised £415m in capital receipts from sales, and cut running costs by £98m (Local Government Association (Feb 2017) “One Public Estate: Unlocking the Value in Public Sector Assets”). While OPE is open to all local authorities to apply, funding is given to those that can prove that their projects will have a real impact on their estate and operations. It is therefore critical that projects show best value for money.

Local authorities have also formed partnerships with the NHS to create Sustainability and Transformation Plans (STPs), with each area developing proposals for the needs of the population in that area. The Autumn Budget should include an announcement for a multi-year capital programme to support implementation of approved STPs. However, STPs are not statutory; the implementation of any plans or projects is up to their component bodies, and any changes might also be subject to public or staff consultations and local authorities having the right to call for scrutiny.

The primary objective of both OPE and STPs is to develop projects built around the needs of the local area, encouraging partners to work together to obtain better value from public land and buildings and achieve better outcomes. The aspiration is ultimately to deliver efficient and effective services from a rationalised estate, realising capital receipts through the release of surplus assets, reducing annual running costs, and generating more jobs.

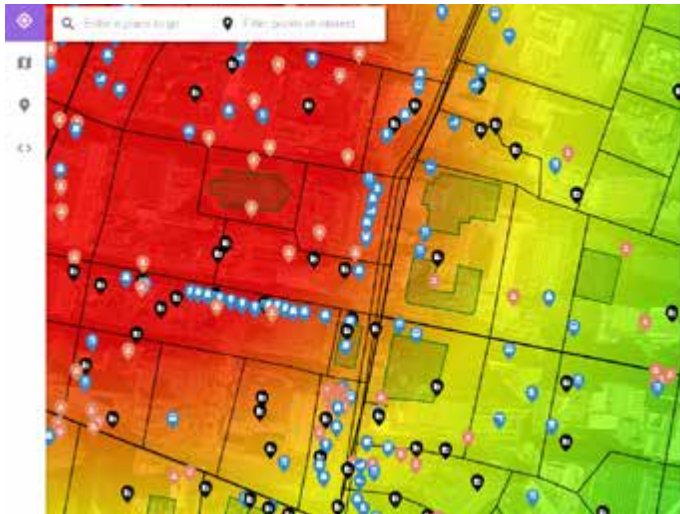
The starting point for local authorities

looking to apply for either of these programmes is to understand where they are now. One of the first OPE requirements is that partners compile and map their property assets. As Brian Reynolds, OPE Programme Director, states, “if you don’t map all of your assets you’ll never properly know what opportunities for joint working there are.” Strategic objectives such as housing targets, schools’ requirements and healthcare need to be considered within the context of population projections, demographic changes, shopping habits, transaction logs and spending data that will shape demand. Asset strategies then need to be formed alongside service strategies to provide a holistic response. Gaining insight into all these factors that is empirically based, rather than subjective is, however, the challenge, let alone keeping abreast of changes to ensure that a strategy is not out of date by the time it has been researched, drafted and adopted.

Strategic asset planning has largely been estate led – analysing efficiency of occupation and considering costs and values of options, while engaging with service personnel to understand service requirements and the likely shape of future services. The former is evaluated quantitatively but the latter qualitatively and subjectively. There will be many cases in every organisation where there are inevitable tensions between asset and service managers attempting to square a circle and bring together the qualitative and the subjective. While there isn’t a shortage of data on service delivery, information sits in silos and the analysis techniques are not sufficient to enable a holistic view of assets alongside services and the factors that drive demand for them.

Moving to the future

The UK government and wider public sector produces and has access to unparalleled quantities of data. The tools now exist to visualise and analyse this

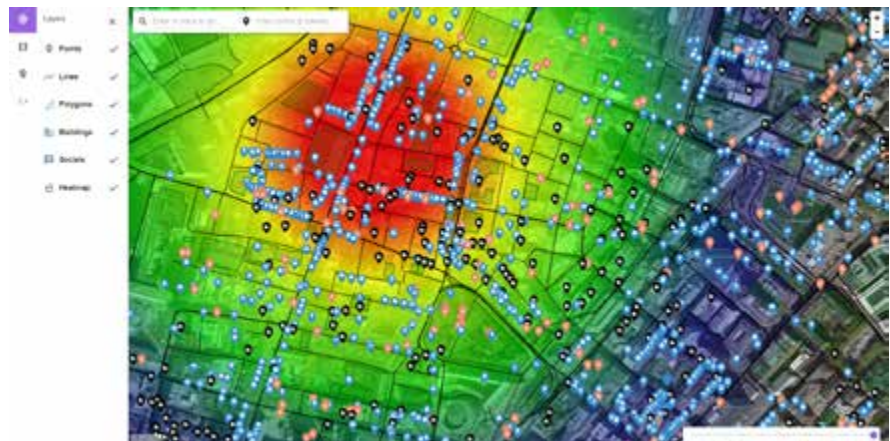


data in a way that makes it accessible, and proprietary algorithms can be developed to drive value from it. Bringing together the public sector's data with open data and social media can lead to a step change in the ability of OPEs and STPs to drive change and meet their objectives in a way that is not currently being harnessed.

Fortunately advances in data-driven approaches across the public and private sectors are being forged, which are directly applicable to strategic asset management. Major consumer brands are now using advanced geo-located data analytics, processing vast quantities of demographic and open data, including real time social media, to identify patterns and gain insight. Within the public sector only a few organisations are using these techniques, and more could be done.

Examples of previous work undertaken by LSH's Knowledge Network partners, Black Swan and Mastodon C includes:

- Developing a data platform (Witan) to create shared population projections for the Greater London Authority and the London Boroughs
- Helping a local authority to identify which children known to social services were most at risk of going into care, so that social workers could prioritise interventions
- Assisting a county council to predict future special educational need and disability demand and costs, providing evidence of how different ways of configuring services could reduce those demand and costs



- Identifying health trends via social media and complex environmental information to predict demand for allergies and cold and flu at hyper-local, postcode level in advance of any local authority
- Using social and environmental data to create day or week and time of day forecasts for the NHS to improve accuracy when planning resourcing for both volume and type of trauma cases within A&E units.

For every one of the above examples, there are dozens more within the private sector. The key aspect of all of these is utilising increased computer processing power to overlay and interrogate data sets, identifying patterns and creating algorithms that lead to prediction and drive strategy in a holistic way which until recently hasn't been possible.

More could be done

OPEs and STPs focus on the needs of communities by making use of assets in a way that creates efficiencies in services for a generation. In many cases however, the

public sector is not making the most of data driven, technologically advanced solutions and needs to recognise that effective and efficient OPEs and STPs can be further enhanced through a data driven approach.

It is critical from a strategic asset management and service perspective to build on the approaches being adopted in the public and private sectors to generate greater insight into citizens and places. Creating joined-up, smart services is about understanding how citizens use and access services now and in the future to create smart assets. The ability to use predictive analytics and advanced approaches to scenario modelling will enable service and asset managers to collaborate around a data driven, evidence based picture of an area, reducing subjectivity and optimising the public sector estate, putting the customer and value for money at its heart.

Many consumer-led corporates have led the way in developing national and international data platforms and are using data analytics and predictive algorithms to drive value.

The average OPE funding provided is £84,000 per authority and in every case the first stage is to map assets, taking on average 3-6 months, and could cost a big proportion of the initial funding received. This stage maps the assets and results in property-led opportunities being identified, and while service discussions would have been held, it does not place those assets within the context required to enable them to be optimised to support services. Opportunities might be missed: strategies overly focussed on rationalisation rather than optimisation.

The OPE represents the perfect opportunity to drive this step change, with the Government Property Unit and Local Government Association working with central government and the wider public sector. The Witan platform developed with the Greater London Authority was funded through Innovate UK and is one example of how this approach can work and is now used to predict demand for services such as schools and social care, including, ultimately, service locations. This approach now needs to be more widely adopted, harnessing the power of public data within an advanced data platform, to support decision making and to create efficiencies. Our Knowledge Network platform demonstrates the potential of what could be achieved and the value it could drive.

The immediate access to geo-located data related to service demand cannot be underestimated. The value and speed of insight available to support the asset mapping stage of any OPE project with geo-located data will move from an estate-

led approach to a more thorough service and customer driven approach, leading to better decisions, more collaboration, faster action, and greater learning across the public sector.

Sitting at the heart of the government's commercialisation agenda

Data is becoming increasingly valuable as the algorithm economy grows. As the Economist reported *"...a subsidiary of Caesars Entertainment, a gambling group, that filed for bankruptcy in 2015. Its most valuable asset, at \$1bn, was determined to be the data it is said to hold on the 45m customers who had joined the company's customer-loyalty programme over the previous 17 years"* (Fuel of the future – Data is giving rise to a new economy. How is it shaping up? (The Economist, 6 May, 2017).

Tesco Clubcard was one of the most important retail innovations of the 20th Century; its launch thought to be the foundation of Tesco's rise to become the dominant retailer in the UK. The loyalty card, or rather the database behind it, provides Tesco with an unprecedented level of detail into shopping habits, making it possible for Tesco to predict consumer trends and react to them. Its success can also be measured by other supermarkets following suit.

The Met Office is currently commercialising the vast amount of weather data it produces, targeting several industries. For the property and construction industry, the Met Office is assisting contractors to incorporate

weather information into the planning and project analysis phases, to reflect as closely as possible the actual conditions expected or experienced on-site to minimise downtime.

The vision is for the UK government to follow suit across public services. An ageing population and increasing demand for services alongside major budgetary constraints is the UK's biggest challenge. Utilising a data driven approach alongside estate targets will enable a coordinated public sector response that will drive efficiency, value, and a genuinely optimised estate.

This vision is by its very nature far-reaching and in some cases baby steps are required. It is equally possible to start small and LSH, Black Swan and Mastodon C are working with multiple public sector bodies to provide data led solutions to service and asset management on discrete projects, generating value.

The last decade has in part seen the progression from buildings to smart buildings by engaging occupiers in the running costs to improve operational performance. The approach advocated here can drive transformation to smart services and even smarter assets that align with and support them. Value can be driven on individual projects; however, the power of the data available, the ability to create efficiency across the public sector and create lasting value, and the ability to commercialise it, can only be achieved through a joined up, centrally-led approach. ■



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