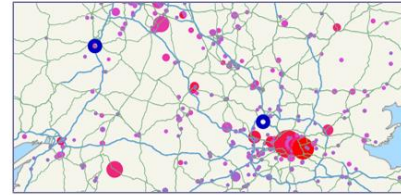


Map-based analysis for Logistics

We turn your data from hard-to-interpret spreadsheets.....into easy-to-understand maps!

Postcode	Sales £	Cartons	Current depot
CO15 4QJ	£124.10	3	Enfield
WS10 9AT	£156.00	4	Birmingham
OX17 1SP	£306.94	6	Birmingham
SY2 6TA	£70.30	1	Birmingham
...			

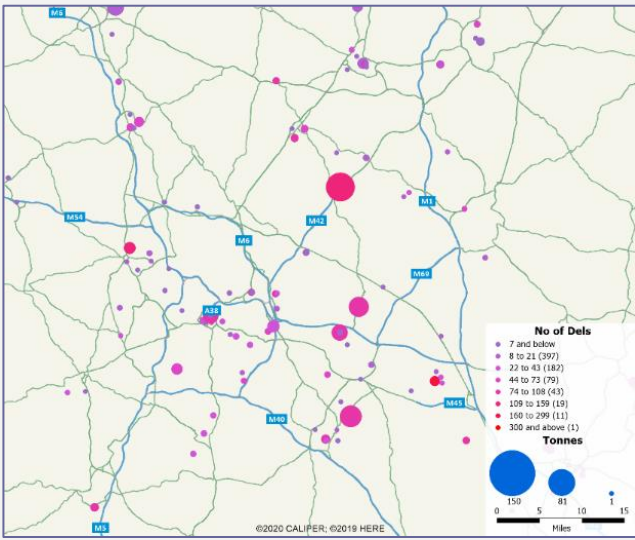
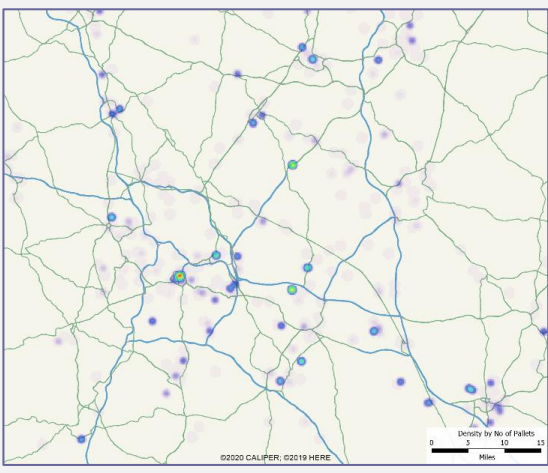


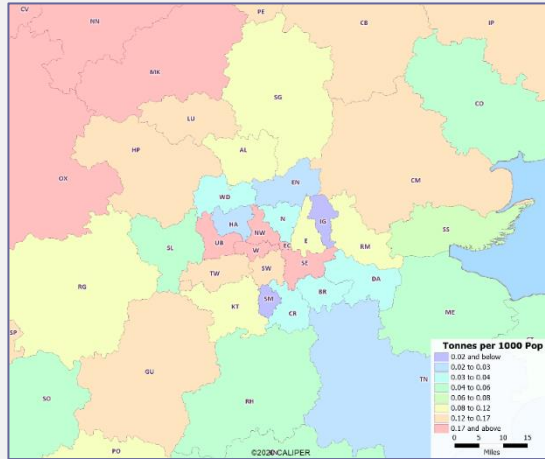
I've been told that it would be useful to say a bit more about the potential stages of a map-based analysis project in a logistics context, so here goes.

We use Maptitude – Maptitude is a GIS (Geographic Information System) tool, which means that you can interpret your data on a map and also interact with other layers on the map – it's not just a picture of a map in the background. Your data has a relationship with the other features on the map – the map 'understands' which roads your data is adjacent to and what areas a particular location is in, such as postcode district, local authority or other types of area which mean that we can tap into all sorts of demographic data such as population and household income.

I've talked through a typical project below:

Activity	Detail																								
Pre-project	We are happy to sign and respect your confidentiality / non-disclosure agreement.																								
Data	<p>You send us your UK postcodes and other data - can include numerical data and / or categories. Could be existing locations such as depots and customers with various volume measures such as no of deliveries, pallets, tonnes...</p> <table border="1" data-bbox="391 1220 877 1400"> <thead> <tr> <th>Postcode</th> <th>Sales £</th> <th>Cartons</th> <th>Current depot</th> </tr> </thead> <tbody> <tr> <td>CO15 4QJ</td> <td>£124.10</td> <td>3</td> <td>Enfield</td> </tr> <tr> <td>WS10 9AT</td> <td>£156.00</td> <td>4</td> <td>Birmingham</td> </tr> <tr> <td>OX17 1SP</td> <td>£306.94</td> <td>6</td> <td>Birmingham</td> </tr> <tr> <td>SY2 6TA</td> <td>£70.30</td> <td>1</td> <td>Birmingham</td> </tr> <tr> <td>...</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>NB Data should be in Excel in columns with single headings for each column and postcodes should be in a separate column. To avoid GDPR issues please avoid including individual names and addresses, personal information, etc.</p>	Postcode	Sales £	Cartons	Current depot	CO15 4QJ	£124.10	3	Enfield	WS10 9AT	£156.00	4	Birmingham	OX17 1SP	£306.94	6	Birmingham	SY2 6TA	£70.30	1	Birmingham	...			
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Geocoding	<p>What this means is that we put your data onto the map – usually in the UK using your postcodes (that's why it's important that they are in a separate column in your data).</p> <p>There will be some postcodes that don't automatically Geocode. It could be down to mis-typing, it could be a DC that hasn't been built yet, it could be old postcodes... We'll produce a data report and then discuss with you what to do about it. We can import the data at a less accurate level eg postcode sector or district – if you're looking at a national project, this will be satisfactory. Or you may choose to clean up your own data.</p> <p>The better the quality of the data, the better the quality of the results, and once all your data is on the map we can start producing something useful...</p>																								

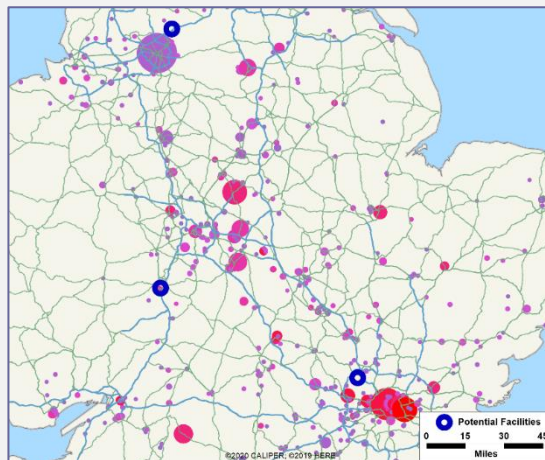
<p>Spots on map</p>	<p>We can show your data as spots on the map - you can see all the locations you service, and not just where they are, but they could be coloured up by the number of times you've been there in the past year and/or sized by the tonnage. We can put maps as pictures into Powerpoint ready for you to use in a report.</p> 
<p>Density heatmaps</p>	<p>If you have lots of locations, particularly in city centres etc, resulting in spots on top of spots, this map not give you a true feel of where your business is strongest, so we can present your data in a different way...</p>  <p>And do things like getting rid of labels if they're getting in the way!</p>
<p>Tag by area</p>	<p>You won't even be aware that we're doing this with your data, but this is a really useful function in Maptitude. We can 'tag' your data with an attribute from another layer – this means that you can append info about what areas a drop is in eg which Postcode Area (ok, could have done that in Excel easily) or things like Middle Super Output Areas - these are areas used by ONS (the Office for National Statistics) and have some more updated areas of key demographics. Tagging your data then enables us to...</p>
<p>Shaded map & demographics</p>	<p>Produce maps which show the density of your map by area and contrast your data with demographic data for that area – where do you already have good market penetration or where could you expect that you might do more business in the future? Show this list to your marketing department: https://www.caliper.com/pdfs/maptitude-uk-data-fields.pdf ... </p>



This sort of map could be used to compare pre-Covid with current concentrations.

Centre of gravity or Facility location

We can quickly create Centres of Gravity on all your data points, and these can be weighted by any of the other numeric data you've included – CoGs are based on crow-fly distances. But, even better, Maptitude's built in Facility Location tool uses the road network and can be used to determine the best service position (NB There are other options) for more than one location eg depots plus outbases and again can be weighted by eg deliveries, pallets... We amalgamate your data to eg Postcode Area level to keep the overall timing of your project to something sensible. We can then move onto more limited selections at, say, Postcode District level, to refine the answer. Existing depots can be included in the mix.

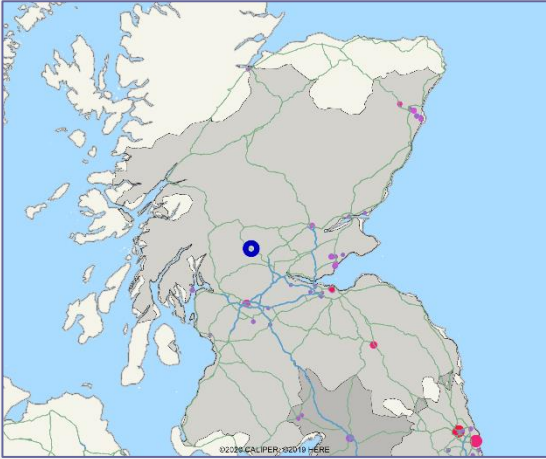
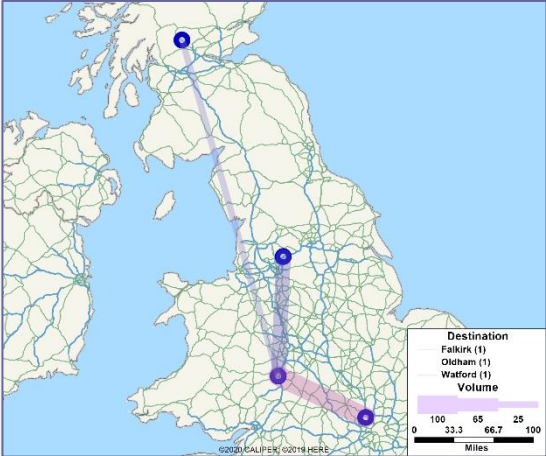


We can carry out this analysis and compare pre-Covid with current - for instance, this data set was very strongly London-oriented and may well look different now.

Drive-time zones

What we generally look at next is the practicalities: are you likely to find a warehouse in the area indicated, what proportion of the work can be carried out from the main depot, is the trunk time between locations sensible, what are the trunk volumes likely to look like?

This is often a good time to create drive-time zones, showing you how far you can go out from a potential depot in a particular length of time. The road speeds included in Maptitude are general speeds from HERE 2019 at Wednesday lunchtime, so we apply a factor which scales back the speeds if the project is for HGVs. If your project is using vans or looking at end-customer catchments, then there is no need to apply a factor. The drive time zones will then show you the

	<p>extent of coverage, overlap and exposure.</p> 
<p>Network partition / Territory management</p>	<p>We will probably need to apportion customers between the various locations. This can be done automatically in Maptitude using the Network Partition tool, or we can use the Territory Management tool, where we can keep an eye on what's apportioned versus depot capacity, or sometimes its easiest just to use Maptitude to create travel times / mileage tables and do it in Excel.</p>
<p>Visualising flows</p>	<p>While everything else we've done so far plays a part in the analysis, this is really about visualising the result (perhaps for your board presentation):</p> 
<p>How long and how much?</p>	<p>To do all of this would probably be a project of 3 or so days spread over about twice as many working days, depending on the size and quality of your data set and what you want to achieve. We charge £138+VAT per hour, so estimate £3,000+VAT.</p>
<p>After-sales</p>	<p>We're happy to answer questions after we've provided our report with your maps including commentary to go with them- if there are particular maps or views that you require, please let us know.</p>

Ring Kirsten Tisdale, Aricia Limited on 01295 758875 or 07764 943171 to discuss further or email kirsten@aricia.ltd.uk