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Connecting to a faster mobile world

James Nolan explains how the application of spatial data and GIS analysis helped create one of the largest UK technology companies and deliver Britain's first 4G mobile network

The UK mobile phone market is the most competitive in the world; a number of network operators chase a saturated customer base. A joint venture between two leading operators created the market leader. At the same time, there was a switch toward increased mobile data use, with the advent of the Smart Phone. The launch of Long Term Evolution (LTE) or 4G allowed this new operator to be the first to offer increased download speeds to its customers. The use of Geographic Information Systems (GIS) - and the data created through their application - was instrumental in the delivery of the UK's largest mobile phone network, and in locating the shops which sold its products.

Local market share

Market share is a key metric for mobile phone operators; the value of the market is based on earnings - generated from a customer's contract lifetime value. A precise market share measure was needed at town level, and this required a number of innovative GIS approaches.

Existing customer counts combined with market research responses at postal sector level were used within a spatial interaction model to aggregate each of the network operators share; this was applied to over 4,000 local markets. One operator had already used this data successfully; it found that a robust friends-and-family tariff created a geographically-related customer base and increased local market share. This proved to be a powerful tool for targeting sites for

successful new stores in and around the capital city.

Coverage and customers

Network strength coverage statistics are derived from cells placed throughout the country. Signal strength measures are related to individual postcodes, which allows customers to check signal at home and at work.

GIS enables this data to be further aggregated to postal sectors and then attributed to store and town catchment level. Precise catchments can be established from existing customer addresses. Once combined with detailed residential census counts, local market share and signal strength, property investment decisions can then be made with speed and confidence.

A new generation

Local market share data was also used for selecting trial stores - which would form a new third brand. This new brand was unveiled as a single store to replace two company stores in existing locations. Following the trial period a further 30 new units were planned, but with a presence in over 400 locations, seeking new viable towns was a challenge.

Geographical data for local catchments around retail parks and urban centres were generated independently from non-represented towns. The presence of local competition and resellers was important so a comprehensive store data set was also mapped. A target town list was created using the available local data and each location's viability was

checked. With further comparative analysis, the size of the opportunity for additional direct sales was calculated.

At first, three store brands traded together offering tariffs from two mobile networks; customers shared improved signal from the provider. Eventually a single new brand was launched. The fascia of all company stores was changed in a single night. This was timed with the launch of the UK's first 4G mobile phone network.

Rollout of 4G

The application of GIS was instrumental to the rollout of the 4G network by optimising access to the retail estate and to the existing customer base. The approach initially targeted centrally located stores in the UK's major cities. The second phase saw commuter towns, within a defined distance from these city centres being prioritised. This stimulated



Three existing brands were merged into a single new brand, with retail store fascias and fittings changed overnight in preparation for 4G rollout. Photo: © Adam Gregor / Shutterstock

demand in towns close to the 4G services and stores in the major cities. This targeted approach gave access to the benefits of 4G speeds to the largest number of people very quickly.

The launch of a single branded store fascia was starkly illustrated on high streets across the country, with some stores trading directly next to each other. The GIS resource was now used to plan a store consolidation programme. Geographic data was organised with local market statistics and key performance indicators for comparison immediately before and after consolidation. GIS was also used to calculate the distance, and number of competitor stores between the company stores. Maps of the proposed works and future estate were produced to identify how the programme would impact different regions.

Making the right call

From cell sites to sale sites, there is a wide variety of property planning applications using GIS techniques in the telecoms industry and beyond. Much of the data used in business is spatially referenced, and even more held in a geographic context.

Physical assets, household types, market data and sales patterns can be reported in a geographical context. The aim is to make the best use of GIS analysis and decision support for business and property professionals, ensuring they make - the right call.

James Nolan is Senior Geospatial Analyst with the Commercial Research Department of Knight Frank, the world's leading independent real-estate consultancy, headquartered in London (<http://www.knightfrank.com>)



From cell sites to sale sites, GIS techniques are employed in a wide variety of property planning applications. Photo: © Martin Mojzis / Shutterstock

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