

## DATA & ANALYTICS

# Data Centre Location Analytics

Data centre locations have become scarce owing to ever-increasing customer demand for suitable locations, seen especially in large business hubs such as London, New York and Frankfurt. Advanced modelling makes it possible to consider additional options and optimise the eventual choice.

To be worth considering, a data centre site should be economically viable and situated away from natural and man-made risks, such as those from flooding or fuel dumps. Most importantly, sites need access to stable electrical power supplies of sufficient wattage to support the data centre load. In major cities, however, power supplies cannot always be upgraded in a timely manner. A detailed understanding of a location's access to power, and of the quality of the supply, is therefore essential, but data is sometimes sparse.

Sophisticated modelling can be used to augment existing data about power and other parameters, and provide the foundation for site selection. Remote sensing techniques combined with interrogation of planning records, news feeds and other "surrogate" information sources can build up a data set suitable for the modelling process.

### POWER AVAILABILITY AND RELIABILITY

Using machine learning and unstructured data (e.g. satellite photography), FTI Consulting is able to model power requirements where others can't.

### COMMUNICATIONS INFRASTRUCTURE

The model incorporates structured and unstructured data on the proximity and capacity of key communications infrastructure.

### REAL ESTATE AVAILABILITY

Uses real estate pricing, type and sales history to identify locations that are likely to be available.

### MULTI-DIMENSIONAL RISK

Incorporates predictions of catastrophic **and** physical security risk to identify locations as well as specify additional infrastructure requirements for otherwise suitable sites.

### SITE DISCOVERY

The model identifies new sites for Tier 1-4 data centres that would otherwise be hard to find because of data availability and the limits of expert data analysis.

### "WHAT IF" ANALYSIS

The solution uses Bayesian analytics to support "what if" analysis of different infrastructure investment scenarios enabling detailed strategy and location planning efforts.

### PROPRIETARY AND EXPAND

The FTI Consulting solution is powered by machine learning models derived from recent academic research. The models are growing via the addition of new data sources (e.g. diesel storage permits) and ongoing updates.

## OUR DATA & ANALYTICS SERVICES AT A GLANCE

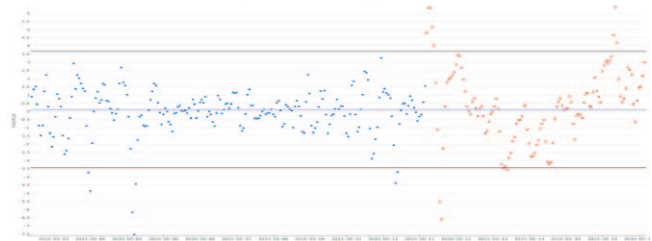
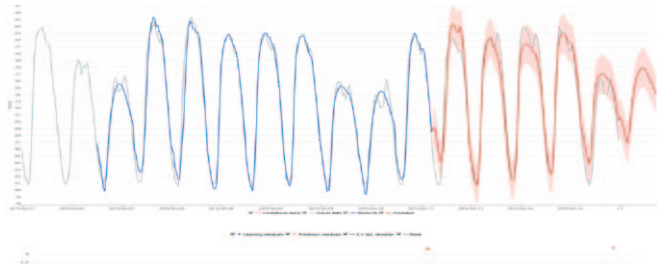
FTI Consulting's Data & Analytics (D&A) experts assist clients in resolving complex business problems, making the right decisions, and creating value. Our D&A team has never encountered a client data challenge – in either size or complexity – that could not be overcome. We are constantly evolving technical capabilities and platforms to reveal and enrich analytical insights. Enabled by our software solutions and data visualisation expertise, we empower clients to maximise outcomes during critical events and evolving matters.

- Forensic Analytics
- Decision Analytics
- Data Extraction and Preservation
- Data Transformation and Management
- Operational Analytics and Visualisation
- D&A Software Solutions

# Data Centre Location Analytics

## Data centre location model case study

### HIGH-COMPLEXITY LOCATION: JOHANNESBURG



### Approach:

A prototype model was developed for Johannesburg where there are not many established sites for data centres, and not much data exists generally that would help to find a location.

This model identified a combination of well-known zones (with existing data centre construction evident) and new zones suitable for construction.

### MODEL APPROACH

The model combines the output of several streams of analytics applied to structured and unstructured data sources to identify zones/areas that meet (or “can meet”) requirements for supporting a Tier 4 data centre.

The analytics are generalised to allow for the creation of additional data points, such as power availability/stability for environments where incomplete data or no data is available.

- The model uses a Bayesian network system to support “what if” questions to be included in finding suitable areas, eg:
  - What would be a suitable area if onsite power generation were to cover 30% of the load?
  - If climate models and flood areas change, where are the new safe zones?
  - If the data centre were to be Tier 3, where are the best areas to build?
- The model uses a large number of criteria to identify suitable locations:
  - Minimum ~ 5,000 square metres
  - MWs of power to be delivered to data centre
  - Power stability and redundancy
  - SLA uptime 99.999%; downtime <1.6 hrs per year.
  - Natural hazard avoidance and physical security of site
  - Access to telecommunications network infrastructure
  - Cost of land

To find out more about how our services and solutions can help your business, please contact one of our professionals below or visit us at [www.fticonsulting.com/data-and-analytics](http://www.fticonsulting.com/data-and-analytics)

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### About FTI Consulting

FTI Consulting is an independent global business advisory firm dedicated to helping organisations manage change, mitigate risk and resolve disputes: financial, legal, operational, political & regulatory, reputational and transactional. FTI Consulting professionals, located in all major business centres throughout the world, work closely with clients to anticipate, illuminate and overcome complex business challenges and opportunities.