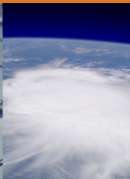
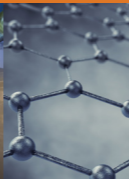




Hartree Centre

Science & Technology Facilities Council

Insight stories - Intense computing enabling innovation



Developing new products

Customer: Unilever

Consumer goods multinational Unilever is working with us to boost their speed and efficiency in developing new home and personal care products.

Using our facilities, Unilever can undertake fast, accurate

modelling of how product ingredients would combine, reducing the number of physical experiments needed to establish shortlists of viable ingredients. Product stability testing can also be slashed from 8-12 weeks to just 45 minutes.



Outcome: Shorter time to market and sharper competitive edge


Predicting project risk

Customer: Democrata

Our big data analytics solutions have enabled Democrata to use open data to predict the presence of ancient remains on construction sites.

The start-up achieved proof of concept and produced a prototype model which combined and mined huge,

diverse datasets about previous finds, settlement patterns and landscape characteristics. This big data was then harnessed to create sophisticated predictive algorithms which could help construction firms minimise costs and delays resulting from archaeological finds.

A silhouette of a construction crane against a bright orange sunset sky. The crane is positioned on the right side of the frame, with its long jib extending towards the left. The background shows the faint outlines of a building under construction.

Outcome: Customisable model that prevents construction delays

Improving aircraft design

Customer: University of Manchester

We provided the high performance computing power needed to enable the University of Manchester to develop more complex, more accurate computational fluid dynamics (CFD) models for aircraft designers.

The team cut development/run times from months to days and also took the first step towards simulating a whole aircraft – potentially helping to develop aircraft that use less fuel, generate less noise and produce fewer emissions.

Outcome: Fast-track development of improved aerodynamic models



Developing supermaterials

Collaborator: University of Leeds

Our cutting-edge simulation capabilities have generated deep insights into the quantum mechanical behaviour of graphene – a phenomenally thin, incredibly strong material with huge potential in the field of nanoelectronics.

The project helped to explain how metal atoms bind or react with graphene – vital to determining how this revolutionary material could work in electronic devices and deliver faster nanoelectronic technology for a range of applications.

Outcome: Knowledge vital to exploiting game-changing new material

Credit: © Nobeastsofierce | Dreamstime.com



We collaborate with industrial clients and research partners on projects that create insights and value using high performance computing, big data analytics, simulation and modelling.

To find out how we could work with you on your own success story:

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