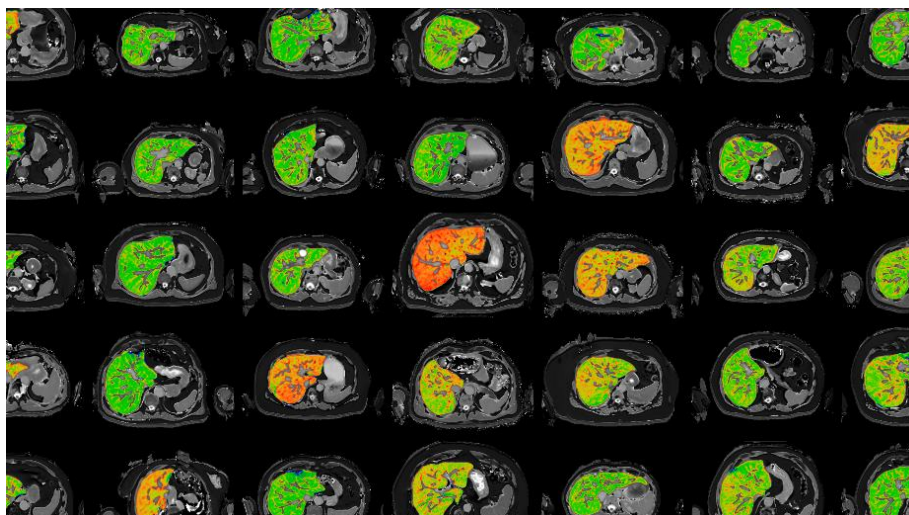


Oxfordshire Innovation Engine 2023 Case Study – Oxford Investment Opportunity Network (OION)

Perspectum span out of Oxford University in 2012, based on a pioneering discovery by Dr Rajarshi Banerjee.

Dr Banerjee was convinced the MRI research he was conducting at the city's John Radcliffe hospital for diagnosing heart conditions would be best applied to the liver. Traditional ultrasound results only give doctors a rudimentary image, which he refers to as similar to the silhouette a photographer gets when they take a picture of someone in front of a bright window. He suspected MRI scans could give greater clarity but the problem with the liver is it is full of iron and so is difficult to image accurately with a magnetic system. Dr Banerjee's solution was to take MRI images on two different axes and use a sophisticated AI programme to determine iron levels and counteract them, so they do not influence the final scan. The result was a breakthrough he and the University hoped would save many lives in diagnosing the early stages of liver disease non-invasively.

In particular, the scans are well suited to assessing patients for Non-Alcoholic Fatty Liver Disease (NAFLD), which the British Liver Trusts estimates affects one in five people in the UK. Catching the disease at this stage is helpful because, if left untreated, it can lead to Non-Alcoholic Steatohepatitis (NASH), which in turn can lead to cirrhosis, liver cancer and liver failure.



The company then expanded beyond liver scans, using its in-depth knowledge of what healthy organs should look like to enable it to spot the early signs of disease in multiple organs. This led it to be tasked, during the pandemic and shortly afterwards, to carry out multi-organ scanning to check for organ damage caused by long Covid. This 'CoverScan' project checked lungs, kidneys, pancreas, heart, liver and spleen. It ended in 2022 and found that 29% of people with long Covid could have damage to multiple organs and 59% could have damage on one organ. The project led to Perspectum launching CoverScan as a multiorgan scanning service, alongside its LiverMultiScan and MRCP+ (biliary and pancreatic scan) products. These have been recognised by both Medicare and commercial payers in the US and are also available in the UK, privately. In the UK, Perspectum's services are also being used to reduce scanning waiting times for the local NHS at its Community Diagnostics Centre at its Oxford Business Park offices.

International expansion

Dr Banerjee believes his breakthrough idea for better liver imaging, and then scanning multiple organs, is just the start of medicine moving to consider the whole patient, as reflected by its research work with pharmaceutical giants on the impact of different drugs on each patient. "Developing multi-organ imaging is a good way of looking at the whole patient," he says. "Normally we wait until part of you gets sick and then send a specialist for that part. We've forgotten how to do holistic medicine. This work on precision medicines and getting the necessary recognition and reimbursement codes for its scanning technology to be used in the United States, and in other regions, has meant the past couple of years has seen "a lot of activity". The business announced a series C fund raising of \$55m in the first quarter of 2023. The investment will be used to build up its business in the US as well as further develop its scanning technology for use in detecting inflammatory diseases and cancer. In total, the business has raised \$140m since forming in 2012. It now employs circa 280 people across offices in Boston, San Francisco and Dallas, which handle interpreting scans from American patients, while Singapore handles those in its local region. Portugal covers the EU and scans in the UK are processed in Oxford.

Oxford HQ

The city is likely to remain its HQ, as well as its centre for research and development, for quite some time, Dr Banerjee reveals. While part of this reason is down to the area scoring highly on living indexes as a great place to work, socialise and relax, there are also more practical reasons for remaining in the city. "Oxfordshire has got a massive talent pool and a great culture of innovation," he says. "It's a pretty easy place to do business from, there's very little reason to move. A place would have to be really exceptional for us to move, and I don't think a place that special really exists. So, it's easier to retain UK headquarters with satellite offices."

