RAPID MIGRATION OF THE NATIONAL CONTACT TRACING AND ADVISORY SERVICE TO AWS

About Public Health England (PHE)

An executive agency sponsored by the Department of Health and Social Care, PHE is dedicated to making the public healthier by promoting healthy lifestyles, responding to public health emergencies, supporting planning of healthcare services and researching and analysing data to provide solutions. Most pertinently, PHE is also responsible for protecting the nation from public health hazards. PHE does all of this through world-leading science, research, knowledge, intelligence, advocacy, partnerships and by providing specialist public health services.

Enhancing the Contact Tracing and Advisory Service (CTAS)

Contact tracing is an established global healthcare concept used by public health professionals around the world to prevent the spread of infections. However, before this pandemic, it was a low profile, internal and spreadsheet-based process. Today, powered by innovative IT, it has become the basis for the public-facing NHS contact tracing service.

In England in 2020, a contact tracing service was established with the primary objective of tracing close, recent contacts of those testing positive for COVID-19 and notifying them that they must self-isolate. The service provided advice and guidance for the public, and data to government, scientific and medical communities allowing insight to the impact caused by the pandemic.

PHE's main challenge was to produce and manage a service that would mitigate the public health impact of COVID-19. The challenges facing PHE in developing the service was exacerbated by the nature of the pandemic. COVID-19 had already changed working practices, meaning teams from many suppliers had to collaborate under remote working conditions. Plus, PHE teams were new, small and did not have the essential skills to manage a service in the cloud, do large-scale digital transformation and 24/7 Live Ops.

The scale of the project also presented challenges, not least in terms of handling sensitive data. There were time pressures with the service having to be designed and built with a variety of users in mind: PHE, Contact Tracers and the public. There were also regular changes to the remit throughout the project.

Migrating an on-premise service to the cloud

Kainos was recommended by AWS to PHE in April 2020 and joined the project one week prior to the Isle of Wight pilot in May 2020, taking the first and most fundamental step of migrating the existing application to the cloud, ensuring the service was both secure and scalable. The pace of delivery had to be high and **Kainos successfully completed this initial migration in 6 days**.

After a successful pilot, Kainos continued to work with PHE to support the initial go-live and national rollout, scaling the solution to achieve the availability targets required for the system to be rolled out nationally two weeks later.

Once the project went live nationally, **Kainos provided 24/7 support** with a Live Ops team to continually monitor the system and ensure it scaled appropriately.

In July 2020 after the first wave of the pandemic, when restrictions began to ease, it became clear that new functionality was needed to support a range of areas including local and international travel, integration with other NHS services, data analytics and reporting requirements. **Kainos took responsibility for the end-to-end digital service** from research, service design, development, test and ops. Kainos was uniquely positioned for this as it had the specialist capability inhouse to work through every stage of the project, from cloud migration to Live Ops servers, service design and development.

Kainos worked collaboratively with PHE, DHSC, the NHS and multiple consultancies and suppliers throughout to deliver ongoing service improvements with the aim of minimising the spread of the virus. To solve the challenges involved, **Kainos introduced agile ways of working**. This enabled the degree of flexibility necessary, along with a seven day per week development split across three squads to maintain delivery cadence. This approach accompanied with rapid design processes allowed delivery of critical policy changes within days and the service continued to be enhanced at pace, averaging 2-3 releases each week.

Outcomes

Working in unprecedented circumstances, rapidly and remotely, the Kainos team were still able to work quickly and effectively, partnering with PHE as a single blended team to bring the collaborative, inclusive approach essential to maximising effectiveness of the programme. This is remarkable especially given the scale, scope and critical nature of the project.

Successful migration and go-live of service: delivered on time, within 6 days of initial development

Invaluable partnership: working with blended teams from PHE, NHS BSA and Kainos despite the pandemic and working remotely

Enablement: Kainos improved ways of working for PHE – building succession planning, knowledge transfer and re-usable skills for future projects

Re-usable application: Kainos migrated and enhanced the contact tracing application to address other use cases

No service outages or unavailability of service: throughout the duration of the project to date

Achievements

In the first week of launch, Kainos' solution successfully increased the number of people able to use the service to **22,683** (completion rate: 49.15%).

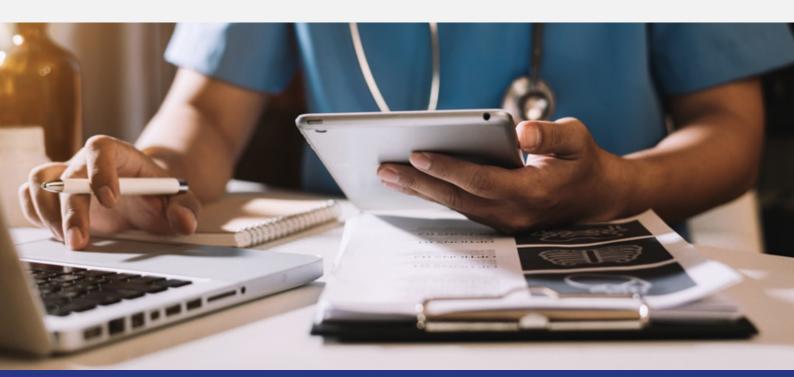At the time of writing, this significantly increased further:

11.7 million
processed cases and contacts

87.01%
completion rate

Data obtained between 28.05.2020 – 31.03.2021

> It's been refreshing to work with Kainos in a way that we don't often see as a government customer. Even with the challenges, time pressures and national scale of this project, the Kainos team partnered us to not only deliver an effective, secure solution, but they also did it in the most efficient way. They effectively became part of our team and also worked to enhance our skills and capabilities through knowledge transfer and by embedding new ways of working. Kainos added value wherever possible and we now have skills that we can use into the future.

Raj Mehta,
Head of Development, Digital Division, Public Health England and
Becky Pettifer,
Head of ICT Strategy & Delivery, Public Health England

kainos®

Find out more at **kainos.com**

Follow our story:

f KainosSoftware

🐦 @KainosSoftware

in Search 'Kainos'