

ACE

CONTENTS

Foreword Sam Ulyatt	03
Introduction Richard Alcock	05
Powering Innovation Toby Jones and Simon Christoforato	07
Our Customers	08
ACE Commissions	10
Protecting the Public	12
Technology and Security	14
Innovation Across Government	15
Our Community	16
Community Stories	18
ACE in Numbers	20

FOREWORD

Sam Ulyatt
CEO, Crown Commercial Service



Maintaining the highest possible quality for public services to enable better outcomes for the UK is at the heart of every decision that is made every day across government.

Continuous innovation is critical to this, alongside an ongoing commitment to pursue every available path to access the best technology and technical know-how, wherever that can be found. In parallel with the wealth of knowledge held across government teams, trusted partnerships are critical to opening up access to the cutting-edge advances and expertise that are increasingly being built up and accelerated by businesses large and small across the UK's flourishing private sector.

The Crown Commercial Service (CCS) – the biggest procurement organisation in the UK – is transforming how government departments can leverage this external expertise, particularly from smaller companies, to become nimbler and speed up the pace of change. The more streamlined and flexible commercial system CCS is bringing in, which will better meet the country's needs while remaining compliant with international obligations, will open up public procurement to new entrants such as small businesses and social enterprises. This will mean they can bid for – and win – more public contracts.

The work coming out of the Accelerated Capability Environment (ACE) over the last financial year has once again categorically demonstrated how crucial the private sector – and SMEs – are to fulfilling public sector ambitions. One of ACE's core strengths is the community of more than 360 individual organisations and experts it draws on to deliver agile, innovative and forward-looking solutions at pace to the complex and often mission-critical challenges

it is presented with. These come from bodies as diverse as the Ministry of Justice, Counter Terrorism Policing, the Royal Navy, the Department for Environment, Food & Rural Affairs and the NHS - but all come looking for help to meet the challenges, as well as harness the opportunities, of an ever more digital world.

The depth, speed and quality of the private sector engagement that collaborating with ACE offers, often provided by SMEs and academia, underlines the strength and potential of the government's progressive SME agenda. It also showcases how much small businesses relish the chance to be partners in public service transformation and innovation, and the rewards everyone experiences when they are. These not only encompass commercial and professional satisfaction, but a deeper understanding of just how broad a range of critical services – and stakeholders – their work can impact, in every part of the public sector.

In my previous role as the Home Office's Chief Commercial Officer, I was responsible for ensuring more than £45 billion of grants and contracted spend were delivered in a way that provided the best possible value for money. Working with ACE and the Vivace community is the epitome of how this can be achieved.

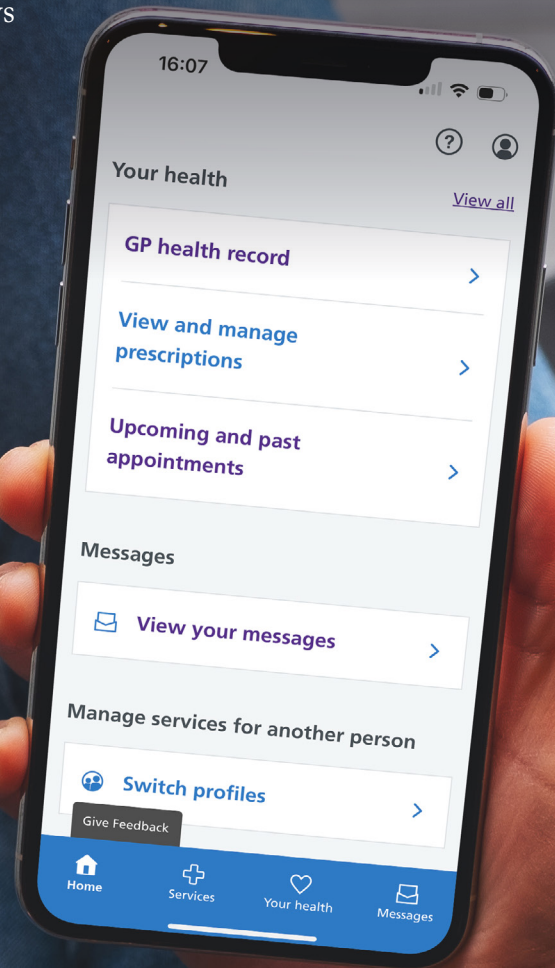
In my current role, I look forward to continuing to champion and support ACE, the businesses and experts in the Vivace community, and the speed and quality of outputs they deliver together across government.

Continued great work, as part of a ceaseless push for better outcomes for every part of the UK, will only bring ongoing benefits for the wider public sector and the crucial services it delivers.



Commission growth in ACE is largely the result of reputation and word of mouth. This Growth highlights one of ACE's defining qualities – that its work should always speak for itself.

Richard Alcock



INTRODUCTION

Richard Alcock CBE

Director Data, Information and Operations,
Homeland Security Group, Home Office



The last year has seen ACE, once again, successfully deliver a broad array of commissions for an increasingly wide range of public sector organisations. I am very proud of the brilliant ACE team and how colleagues from a range of sectors have come together to deliver so well for the public. The environment that we have created to accelerate the delivery of capabilities is delivering value benefits to citizens across the UK; this review provides a good summary of achievements in the last 12 months.

Commission growth in ACE is largely the result of reputation and word of mouth. This growth highlights one of ACE's defining qualities – that its work should always speak for itself.

This growing body of work also has a powerful compound effect. Each of the more than 500 commissions ACE has delivered to date has added valuable insights and learnings to its collective knowledge. These insights and learnings are applied to subsequent commissions which, in turn, grow this bank of knowledge.

We learned very quickly with ACE that its model could be highly effective in sectors beyond its early law enforcement and national security remit, and so this cumulative value is now being felt right across government.

A great example is the work ACE has delivered to enhance the utility of the NHS App to give patients more control over their hospital appointments. While the NHS and UK policing have completely different architectures as national services, they share some similarities in that they are comprised of multiple organisations and with complex dependencies and commercial arrangements. They also share many of the challenges arising from digital technology and data common across many other parts of the public sector.

ACE was conceived to solve complex problems with a relentless focus on outcomes but its ability to draw on its cross-sector, cross-domain experiences has enriched its capacity to deliver practical solutions that are truly innovative.

The mission impact it delivers – the solutions to complex, knotty challenges – is being felt at the operational front-line for more and more public sector customers. In the year ahead the ACE delivery model will go from strength to strength, continuing to find innovative solutions to mission challenges.



Accelerating the delivery of government projects from years to months – and sometimes to mere weeks and even days – means the impact is felt sooner, and it saves considerable time, effort and money too.

Toby Jones



ACE as a model is a multiplier of economic value. Impact and value for money to the customer. Growth and job creation to the SMEs delivering commissions.

Simon Christoforato

POWERING INNOVATION

Toby Jones
Head of ACE

Simon Christoforato
Vivace Chief Executive Officer



Since ACE was conceived it has described itself as being mission-led. We talk about innovation delivering mission impact.

In the seven years since then, we have seen more public sector organisations orienting themselves around the ‘mission’ concept.

This is a welcome shift. ACE has shown the significant value a mission-led approach can deliver.

That value is seen most tangibly in the impact itself – the public good outcomes that result from our solutions.

But the very mechanism of ACE and the way it works has much wider economic value too.

We recently conducted a survey of our public sector customers and they unanimously testified to the impact ACE delivers for them. Eighty percent also highlighted the benefit of the pace of delivery.

Accelerating the delivery of government projects from years to months – and sometimes to mere weeks and even days – means the impact is felt sooner, and it saves considerable time, effort and money too.

We also surveyed the members of our Vivace supplier community.

Just over half of respondents said their businesses had grown since joining, with one reporting a tripling in size, and two-thirds had seen increased revenues. They said drivers of this growth included access to new opportunities and the levelling of the playing field for small companies bidding for government work.

With eighty percent of our Vivace community being startups and SMEs, that is a considerable contribution to UK prosperity through the support of enterprising small businesses.

Then there are the experiences of our Academic Research Network (ARN). To take just one example, Oxford Brookes University last year established a defence and security research centre, crediting membership of the ARN for providing the springboard.

There are countless other anecdotes.

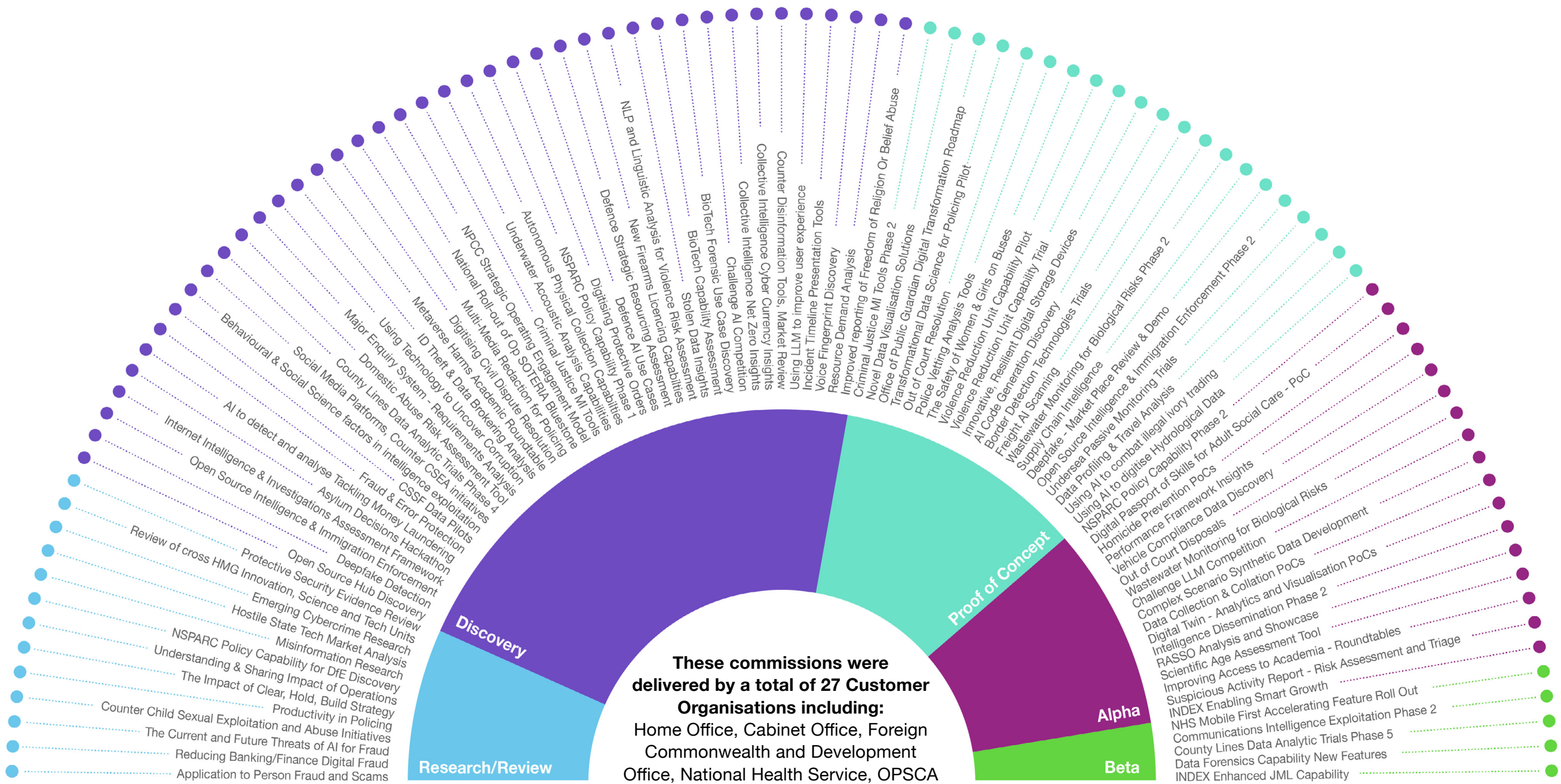
The broader point is that ACE as a model is a multiplier of economic value. Impact and value for money to the customer. Growth and job creation to the SMEs delivering commissions. Skills and opportunities to the ACE core team, which has numbered many hundreds of individuals over the years.

None of this is an accidental by-product of the ACE approach. It was intrinsic to the intent with which we set out in 2017.

ACE proves that being mission-led has a differential effect, making winners of all participants and creating economic value that ripples out from the impact we deliver.

ACE has had an exceptional year, completing over 100 commissions for a wider range of customers than ever before. Notably, the commission value was nearly double that of the previous financial year. And once again, the diversity of our work has drawn on the immense capabilities of the ACE team and our Vivace community. In this year's annual review, we highlight the extensive collaboration and cross-cutting efforts between our team, our customers, and our community. The challenges faced by government remain consistent: accelerating processes through technology and obtaining information more swiftly. Our case studies provide a glimpse into how we have addressed these challenges over the past year, highlighting the impactful work we have accomplished for our customers.

OUR CUSTOMERS



*Phases as per Government Digital Service lifecycle <https://www.gov.uk/service-manual/agile-delivery>

Helping disrupt county lines and providing a strategic blueprint

A pioneering analysis tool developed to proactively tackle county lines activity is now making a broader impact on policing. An initial request to ACE in 2020, the first-of-its-kind tool applies advanced analytics and machine learning to location-event data.

Initial discovery work established location data could help identify useful patterns as a starting point for investigation and a proof of concept was then developed, transforming data science into an easy-to-operate interface. A small-scale trial confirmed its value in targeting resources effectively.

This tool was then used as a demonstrator of how the existing data could be used in different ways, justifying the original collection. And it is now the first to be trialled on the Police Digital Service's new strategic platform for national policing capabilities with the ambition to roll it out nationally.

This tactical work on proving value and then building a crime specific tool provides a strategic blueprint for bringing data science into other operational contexts which will be the core service provided by the NPCC Centre for Data and Analytics in Policing (CDAP).

Combining vehicle data for safer roads

Police need to identify high-risk uninsured, unlicensed vehicles, but data is siloed across organisations. The Operation Tutelage initiative compares automatic number plate recognition (ANPR) data with insurance and licensing databases to find non-compliant vehicles. The Department for Transport and Home Office's RADAR program aims to improve road safety by integrating more vehicle data in real-time for enhanced enforcement and compliance.

ACE was tasked with exploring possibilities, and we collaborated with suppliers from our Vivace community to determine available data granularity and produce a scalable architecture combining disparate data sources as well as a roadmap of future innovations.

The ambition is a real-time system comparing ANPR against a prioritised list of non-compliant Vehicles of Interest. Additional workstreams explored using ANPR to optimise police deployments and finding alternative data sources for vehicles lacking registered keepers. ACE's supplier partnerships were key to scoping an integrated solution.



AI-enabled rescue of historic environmental data

The Environment Agency has around 10,000 years of vital hydrological data on river levels and flows, manually collected but stored on degrading materials facing irreversible loss. Manual extraction by plotting graphs is unsustainable, estimated to take 40 years.

The Department for Environment, Food & Rural Affairs approached ACE to explore using AI and machine learning to digitise and interpret this physical data faster while maintaining accuracy. ACE engaged The London Data Company to determine requirements, characterise data features, identify best methods, and build a proof of concept data rescue tool.

Two open-source tools were tested. A fully automated one showed low feasibility due to limitations with handwritten labels and metadata. The second human-in-the-loop tool performed better, with recommendations to integrate AI for increasing effectiveness on live datasets.

Preserving and analysing this historic data is key for the Environment Agency to understand climatic trends, support sustainable development and contribute to UK security in the face of emergencies.

Advancing forensic innovation for crime-solving

Advances in digital forensics have outpaced 'wet' forensic capabilities for analysing samples at crime scenes. ACE was asked to help build a better understanding of current and future scientific research that could enhance sample analysis and suspect identification.

Three initial areas of interest were identified:

1. Utilising proteomics to analyse complex biological samples
2. Employing epigenetics to detect illnesses or illicit substances
3. Introducing rapid sample detection methods to identify more individuals who were present

ACE, working with its Academic Research Network, industry, and the Vivace community, compiled an internationally curated response detailing current and future capabilities in these areas.

The resulting report identified experts in all three topics, which are at the forefront of scientific research. It also highlighted areas for further research, providing a qualitative assessment of feasibility, threat, opportunity, and affordability for each, which the customer is now considering.



Read more
ACE case studies
on [GOV.UK/ACE](https://www.gov.uk/ace)

Proving the value of the Royal Navy's AI roadmap

The Navy AI Cell (NAIC) is helping the Royal Navy (RN) harness AI's transformative potential. A roadmap with six priority capabilities has been defined to integrate AI operationally.

ACE was tasked with discovery into two capabilities: predictive maintenance for increased platform availability and Counter-uncrewed Air Systems (CUAS).

A four-week study by Mind Foundry and Frazer-Nash found AI/ML techniques such as computer vision and automatic debris classification could streamline airworthiness processes, yielding time savings. A proof of concept was developed to automatically identify iron particles in oil.

Supplier Roke explored practical steps the RN could take to infer greater meaning from legacy signals data to detect, classify and track Uncrewed Aerial Systems (UAS).

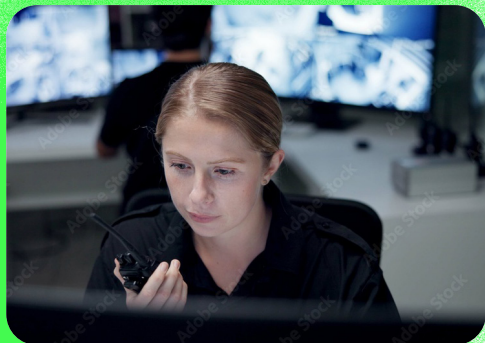
A document has now been developed to combine and process data from complex platforms using alternative approaches, which would improve the RN's CUAS capabilities without costly platform reengineering.

Efficient redaction of sensitive information for police

Police often need to share media while protecting sensitive details, but auto-redaction technology for digital files is limited across policing and criminal justice. The policing minister prioritised developing national solutions, and the Home Office funded ACE to review existing redaction tools and build an evidence case on how AI and machine learning could drive significant efficiencies.

This would accelerate nationwide adoption, ensuring police can confidently share information. ACE first engaged analysts to understand current tools used by forces and shortlist top performers. Suppliers from ACE's Vivace community then designed tests assessing the shortlisted systems' capabilities using synthetic police data. Recommended systems showcased automated redaction potential in live demonstrations to key stakeholders.

The aim was documenting available capabilities, cross-referencing user needs and identifying gaps. ACE's reports will inform the Home Office's next steps to deliver AI-powered automated redaction tools to policing rapidly.



Using data to predict and support the future Royal Navy

The Royal Navy (RN) faces challenges in maintaining a skilled workforce amid technological advancements and demographic shifts. To address this, ACE was asked to explore how available data could predict future workforce needs and reduce turnover.

Butterfly Data and Cranfield University were selected to conduct research using RN and open-source data. Key findings included an aging population reducing eligible recruits, increased education levels, and changing societal trends influencing career choices.

Recommendations included focusing recruitment on eligible populations and expanding beyond STEM fields. Butterfly Data carried out further research and analysis to explore how machine learning using personnel data, including exit interviews, could identify drivers for staff attrition. This would help the Navy better support staff and intervene at critical points to improve retention.

Leveraging data and AI offers the RN the ability to proactively adapt its recruitment and retention strategies to meet future demands and maintain a capable workforce in critical areas.

The NHS App: groundbreaking healthcare transformation

ACE remains a strategic partner in a digital healthcare transformation which is bringing new features for secondary care to patients using the NHS App, the digital 'front door' to the NHS. Over 34 million people have signed up for it to date.

The NHS App gives patients more direct control over their healthcare, including being able to view and manage their hospital appointments in one place. The new features are live in 88 NHS acute trusts, covering 89% of England's population, with more joining over the coming months.

ACE – with supplier Servita – began work with NHS England and the Department of Health and Social Care in January 2022, with an API generator developed and in beta within three months.

ACE was key to surfacing data from multiple hospital patient admission systems and Patient Engagement Portals (PEPs), developing a sophisticated system of APIs and accelerating delivery speed.

Further features were then added, including being able to receive notifications and messages, complete pre-consultation questionnaires and access documents. This benefitted trusts, reducing costs by sending out fewer SMS messages and paper documents to patients.

In the latest phase ACE is continuing to help develop new features while ensuring stable service is maintained.



The ACE story of collaboration extends well beyond our work across government; it encompasses the vibrant Vivace community too. Start-ups, SMEs, the third sector, and academia remain a vital part of what makes the Vivace community so effective and valuable to ACE's customers. This year our suppliers have seen the value of being part of the Vivace community more than ever before. We are happy to share some of the stories from our Vivace community showing that working with ACE is not transactional; that it is a genuine community that is built on support and relationships that are developed with our help. By continuing to build and strengthen these connections, we ensure that our collective expertise and resources are leveraged to their fullest potential, driving forward impactful solutions for our clients and stakeholders.

OUR COMMUNITY

COMMUNITY STORIES

Growth through innovation: Principle One's ACE journey

Principle One, a technical consultancy founded in 2018 which was an early partner on the ACE journey, has grown from a small team to over 60 staff. With a focus on agile delivery, ACE's procurement process allowed the SME to bid against larger organisations and demonstrate new ideas from day one.

An early success was Principle One's work on the APHIDS secure airports system, leading integration between suppliers. The company has also supported diverse ACE commissions across law enforcement, maritime security, the NHS and telecoms research.

CEO Maggie Scott highlights the company's work supporting ACE in tackling violence against women and girls as a recent highlight, which led them to fund innovation to develop an app for frontline officers internally. Working with ACE, where 20% of their projects come from, has been a gateway into new areas like health.

Principle One now brings its own methods of tackling complex problems to ACE and has an emphasis on social value through charity support and Police Now partnerships as well as early careers and skills development.

Butterfly Data – clarifying complex data

Butterfly Data, an ACE supplier since 2020, provides actionable insights for decision-makers by analysing, cleansing and visualising data. The Cardiff-based company started its ACE journey with ten staff but has since tripled in size, gaining significant government and law enforcement experience.

Researcher Isobel Taylor explains Butterfly often recommends prioritising high-impact digital transformation actions, assessing data quality and value using the Gartner Infonomics methodology. The company's work on wastewater-based epidemiology during COVID-19 involved mapping, cleaning and presenting data to scientists, and collaborating directly with researchers to provide clear visualisations which could help inform local lockdown decisions.

Butterfly enjoys collaborative projects, which have included exploring decision support tools and hosting software vendor demos for a customer with fellow community members Bays Consulting. Founder Sara Boltman also values ACE's fast problem-to-solution timeframes, which provide a balance with other work.

Looking ahead, Butterfly recognises data's importance in the net zero transition. The employee-owned, female-led company also prides itself on its peoples' diverse backgrounds, which include PhD holders, ex-military personnel and reservists all able to offer additional insight for defence and national security work.

Unlocking the future: the HACKMASTERS supplier story

HACKMASTERS was founded to help big businesses and government realise the benefits of working at pace and stop them playing catch-up in a time of blisteringly fast technology and application development.

One of the most prominent pieces of work HACKMASTERS has delivered has been exploring how large language models (LLMs) and generative AI can be used to speed up and inform decision-making in a particular government mission area for 10 Downing Street. Another was as part of the Verification of Children Online (VoCo) commission work for GCHQ.

HACKMASTERS is founded on three core principles. The first is speed, using the hack process as a way of very quickly learning – and unlearning – concepts. The second is the importance of a large collective intelligence network and the third is technology first, so understanding how emerging tech can be scaled up, and how it can be applied.

ACE suppliers Coefficient and Bays Consulting win £100,000 AI competition prize

Two suppliers who met through ACE's Vivace community, Coefficient and Bays Consulting, have won a £100,000 Innovate UK grant to address bias and discrimination in AI systems.

They entered the AI Fairness Challenge, run by Innovate UK and the Responsible Technology Adoption Unit, part of DSIT. Their proposal focuses on reducing bias in automated CV screening and applicant tracking systems used in recruitment.

The project includes a market evaluation report, an open-source toolkit, an outreach programme, and the development of technical service and AI safety accreditation. The team is seeking subject matter experts in CV screening and recruitment for an advisory board.

ACE IN NUMBERS

£43m

order value of all commissions that started in FY23/24

104

commissions started

82.5%

of community members are SMEs

337

organisations in the Vivace Community

35%

were follow-on commissions

65%

of commissions were new

3

locations (London, Manchester and Cheltenham) with ACE space

2,400

recipients of the ACE Insights newsletter

£5.3m

in savings and co-investment in the financial year

99

institutions in the ACE Research Network


400+

academics receiving ACE Research Network communications

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