Round 6 Fund application - Alpha project : Entry # 8071

2. Project contact details

2.1 Lead authority name

Nottinghamshire County Council

2.2 Details of the person leading this application

Lisa Drummond

Role

Adoption East Midlands Recruitment, Assessment and Home finding Service Manager

Email address

lisa.drummond@adoptioneastmidlands.nottscc.gov.uk

Phone number

2.3 Details of a senior stakeholder from lead authority

Role

Email address

2.4 Details of a Section 151 Officer from lead authority

Role

Email address

2.5 List your project partners and provide a single point of contact for each organisation:

Project partner organisation	Name of single point of contact	Role of single point of contact	Email address of single point of contact	Phone number of single point of contact
Nottingham City Council				
Derby City Council				
Derbyshire County Council				

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3. Your project proposal

3.1 Project title

Exploring the use of data science techniques to help recruit more prospective adopters for children who typically wait the longest to be adopted.

3.2 Project description

The project will explore using data science methods to scan records of adopters of sibling groups, children older than 5, children of minority ethnic background or children with complex needs. We aim to determine if these adopters have common characteristics that made them more likely to adopt those children and use this insight to inform our Adoption East Midlands' (AEM) regional recruitment activity. If successful this approach could be used nationally, and to recruit foster carers too.

3.3 How much funding are you applying for?

180000.00

4. Project assessment

4.1 Describe the problem and hypotheses that your alpha project seeks to test.

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The main beneficiaries will be the four AEM Local Authority (LA) partners and

children in their care whose permanency plan is adoption.

We will explore using data science methods (e.g. natural language processing and

machine learning), to scan case files of adopters of children in sibling groups /

aged 5 or over / of a minority ethnic heritage / with multiple complex needs, who

typically wait up to a year longer to be adopted, thereby reducing their life chances.

There is a national shortage of adopters for these children.

This project will improve data usability and create a novel, open-source approach

to its analysis. Data science is needed as traditional data analysis techniques are

unable to process text-based information effectively or deal with high volumes of

information.

Our aim is to see whether these adopters had any common characteristics and, if

so, use this insight to target AEM's recruitment and matching activity. No data

science-based view exists to inform our strategy when seeking adopters most

likely to adopt the children we have waiting.

By recruiting more adopters with these characteristics, we hope to find adopters for

those children more quickly. Reducing the time they spend in care will also benefit

AEM and the four LAs, through avoided expenditure on care placements and

freeing up social worker capacity sooner than would otherwise have been the

case.

If successful, we would share this with the adoption sector. This approach could

also inform LAs' recruitment of foster carers.

4.2 Describe outcomes and outputs you aim to achieve by the end of the project.

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The discovery phase's main outputs will be:

● A business case explaining the cost of the problem (financially and in terms of the impact on children's outcomes), and the solution's potential for savings to Regional Adoption Agencies (RAAs) if beta development is completed and rolled out nationally.

● A user research report documenting research undertaken with the four LA partners of AEM and national experts in this space (e.g. the National Adoption Recruitment Steering Group (NARSG), Coram-i). The report will highlight the possible decisions and the possible range of outcomes that understanding the drivers of adoption could give to users.

● A conclusion proposing one of: a) a technical approach for how to deliver the analysis in the alpha phase b) a revised scope for the alpha phase c) a recommendation that this work will not continue. If we proceed to alpha phase, our outputs will also include:

● Open-source code that applies machine learning techniques to identify the characteristics of adopters for specific cohorts of children waiting for adoption, accompanied by instructions for using this code, so that someone with suitable technical skills and access to the data could replicate this work

● A final report that provides key findings and recommendations including advice on how any future interventions could be evaluated and how this insight could be used by other LAs / RAAs.

4.3 Tell us how your project will make local government services safer, more resilient and/or cheaper to run in the context of the problem area.

This project seeks to tackle all three aims:

● Safer services: by helping AEM to recruit more adoptive families for hard-to-

place children we will reduce the time the children spend in care and

increase their life chances

● Cheaper to run: reducing time in care for children also results in avoided

expenditure for LAs, and better value for money through targeted marketing

● More resilient: children leaving care sooner also frees up social worker capacity earlier than would otherwise have been the case, leading to a more resilient workforce that can better meet the needs of the remaining children in care. To achieve this, we seek to determine if there are common characteristics among people who adopt the types of children who usually wait longer for adoption. If we do identify such characteristics, this insight will inform AEM's marketing and recruitment activity, as well as identify any approved adopters with those characteristics who have not yet been considered for such children.

To achieve this, we seek to determine if there are common characteristics among people who adopt the types of children who usually wait longer for adoption. If we do identify such characteristics, this insight will inform AEM's marketing and recruitment activity, as well as identify any approved adopters with those characteristics who have not yet been considered for such children.

4.4 Tell us about who your project stakeholders are and how you plan to engage them.

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Adoption teams across AEM – briefings to support logic and testing

AEM Board members – via the bi-monthly Board meetings

Notts County Council IT, Information Governance, Information Systems,

Procurement, Legal – via internal project comms

Delivery partner (tbc) and Coram-i – collaborative working, either remotely using

MS Teams or in person at NCC offices

Regional Boards – RAA National Leadership Group, Adoption and Special

Guardianship Leadership Board – Coram-I and AEM representatives will brief

these Boards

Coram-i will also produce an end-of project article in sector press, and the delivery

partner will produce open-source code, analysis and instructions for its use so that

sector colleagues can apply it to their own data sets.

4.5 Tell us about any local government sector organisations you engaged with about your project.

We have been in discussion with colleagues at Coram-i to ensure that the issue

we've identified is a national one, and that the outputs of the project can be used

by AEM and more widely in the sector.

Coram-i runs the Coram Innovation Incubator which supports LAs in the

development, implementation and replication of technological and practice

innovation in children's social care.

We have sought the view of the market AI for Government & Public Services - Faculty (Faculty) in defining the project to

understand the art of the possible and ensure that the project is feasible.

Faculty is one of Europe's leading data science companies and has delivered over

400 user-centred data models focused on improving decision making, using agile

practices. Faculty has lots of experience delivering highly performant technologies

to aid decision making - including in complex and high-risk situations, with diverse

stakeholder groups, and are data science capability partners for 7 UK Government

departments, including HO, Counter Terrorism, and FSA.

4.6 How will project budget be used?

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Item (e.g backfill staff time, buy in user researcher, software, hardware and others)	Time/quantity	Total cost/value £	Where will the funding come from? (e.g Local Digital funding or a particular project partner)
Data export, preparation and delivery	15 days	£7500	Local Digital Fund
Subject matter expertise and testing	15 days	£7500	Local Digital Fund
Specialist technical team (to support data access and data science delivery)	1.4 FTE senior data scientist and data scientist over a 10-week period	100.000	Local Digital Fund
Specialist commercial team (to support engagement, project management, user research)	1 FTE project management team member to conduct user research, manage the project and produce high quality deliverables in partnership with the partner organisations, over the 10-week project period.	£55,000	Local Digital Fund
Delivery partner: Data storage and processing power (GPU)	We may be processing and storing high amounts of data. Faculty will pass on charges at cost.	5,000	Local Digital fund
Coram: End of project event	Venue hire, refreshments, staff time to organise	£3000	Local Digital Fund
Coram: Staff time to write end of project article and try to secure sector press coverage	1.5 days	£750	Local Digital fund
Coram: Staff time for stakeholder engagement and project involvement	2.5 days	£1250	Local Digital Fund

4.7 Tell us about your delivery plan.

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[AEM, Coram and Faculty - high level project plan (coram-i.s3.amazonaws.com)](coram-i.s3.amazonaws.com)- high level project plan.

Pre-project objective: Project initiation will begin to mitigate risks, procurement

undertaken.

Discovery phase objective (weeks 1-5): Focus on establishing the business case,

user engagement and refinement of the feasibility of the project / analysis, based

on initial exploration of the data and prototype modelling (agile principles:

prioritising working software over documentation), likely using one, or a

combination of, classification, natural language processing, and clustering models. A go / no go decision will be taken at the end of week 5, about whether to begin the alpha phase Alpha phase objectives (weeks 6-10): This phase will refine the modelling, produce user-friendly analysis, and recommend some potential changes to AEM's recruitment and marketing strategies, including making the code and final analysis available to a wider range of potential users at LAs nationally. Governance (weeks 0-10): Ongoing decision-making will be taken by a weekly working group (agile principles: prioritising customer collaboration over contract negotiation), formed of the leads from AEM, the delivery partner, and Coram-i, with AEM having overall decision-making authority. This regular touchpoint allows us to continually adapt plans as new information emerges (agile principles: prioritising responding to change, over sticking to a plan) about the problem space and feasibility. A steering group will be formed which may be used as an advisory and decision-making forum about the project's long-term impact. Project management (weeks 0-10): Ongoing project management will ensure the project is on track to achieve its objectives within time, scope and quality. We will operate with agile principles in mind, continually iterating on the delivery plan as new information emerges. We would continually engage widely to share progress, learnings and products with stakeholders (agile principles: valuing individuals and interactions over processes and tools).

4.8 Describe how your project team will have the skills and time available to deliver the project in an iterative, agile and user-centred way.

The project's three partners will have the following roles:

AEM: main beneficiary and project lead, providing subject matter expertise

in relation to data availability, problem definition, and shaping the value of

the proposed project outputs.

● Delivery partner: lead on producing the core data science deliverables of the project

● Coram-i: lead on managing wider stakeholder engagement and providing expert input to the future scalability of the project across the sector. Regular feedback will be sought throughout the project from stakeholders to inform our work as it develops, to learn from failures and build on successes.

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4.9 Define the governance structure of your project.

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While each project partner will have a distinct role and brings unique skills,

knowledge and insight, we view this as a joint venture and would seek to operate

as a single team working towards applying novel technology and techniques and

improving our understanding of the adopter landscape.

The organisations have previously worked to develop the project proposal

collaboratively via MS Teams. There is an expectation that the delivery partner and

Coram colleagues are flexible and could travel to Adoption East Midlands if

required.

We would have weekly progress check-ins to review progress towards goals and

manage any blockers. This would be formed of key leads across the 3 main

organisations, in addition to working-level colleagues where needed. This is where

key decisions relating to project scope and decisions would be made.

We would have a fortnightly governance meeting where we engage with a broader

set of users within AEM which would be used for longer term, strategic decision

making and advice. Examples of representation that would shape the project to be

more strategic include a representative from the Adoption and Special

Guardianship Leadership Board (ASGLB), wider RAA leaders' network or voluntary

sector.

There would be the opportunity for ad-hoc escalation meetings where relevant.

We would make use of broader mechanisms to ensure engagement from wider

stakeholders and partners, including engagement with the ASGLB, RAA leaders'

network, and sector stakeholders.

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stakeholders and partners, including engagement with the ASGLB, RAA leaders'

network, and sector stakeholders.

4.10 Outline the risks to project success.

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Top 3 risks:

Data may be difficult to access:

Mitigation: In the event that AEM find data access difficult, either from a technical or privacy viewpoint, the delivery partner would assist in setting up the necessary tools to extract the data in the required format whilst protecting sensitive information.

Small dataset affects analysis quality:

Mitigation: Initial discussions have suggested that there will be sufficient data to draw statistically significant conclusions, and the project will draw on multiple data sources to limit this risk. It is expected that the delivery partner will be able to draw on many technological methods to suit the size and type of data.

Data access processes delay the project start:

Mitigation: if this occurs, it is expected that the delivery partner will be able to generate synthetic data to enable it to start setting up data processing and analysis pipelines, so that when real data is received the analysis can be completed quicker

Key constraints to delivery of the project and the anticipated long-term benefits:

The long-term project outcome may be limited by the cost of follow-on initiatives e.g. not all marketing and recruitment initiatives can be attempted, as they may be cost-prohibitive.

AEM will only hold adoption data relating to the children and adopters they serve, which may limit the transferability of the insights from AEM to other regions.

4.11 Describe how project monitoring and evaluation will happen.

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This project is experimental and innovative in nature - we are not aware of other organisations which have applied machine learning techniques to unstructured, or adoption record data in the past. Therefore, evaluation and monitoring of the project will be focused on continually monitoring the desirability, feasibility and value of the project, particularly with regard to whether machine learning insights will support AEM to generate novel, or more detailed / targeted insights that are tailored to specific subsets of the adopter population.

We will take an agile approach to monitoring the project via weekly working group sessions. These will review the latest evidence from:

● Desirability: what are we hearing from users and our business case development? What long term metrics are most important to monitor and collect data on?

● Feasibility: does our data exploration indicate we will be able to develop a performant model, given the data quality, scale and performance requirements?

● Value: is the project able to continue to deliver within budget, and is there evidence that the project outcomes (a model to identify characteristics of adopters) will be able to deliver meaningful change for LAs and RAAs?

These measures of value are described in more detail in section 4.12.

The project's final output would recommend future monitoring and evaluation methods for any future implementation of recruitment / marketing initiatives.

4.12 Describe the benefits and savings your project is likely to deliver.

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If we are able to successfully identify a set of common characteristics for adopters,

we can use this insight to target AEM's marketing and recruitment activity, as well

as identify any approved adopters with those characteristics.

Data from the DfE's Evaluation of RAAs [Evaluation of regional adoption agencies second report (publishing.service.gov.uk)](publishing.service.gov.uk) shows that advertising, marketing and recruitment can be a significant expense (up to £160,000 annually), while more than 60% of the yearly budget of RAAs is spent on staff (over £2 million per annum). By using this project's insight to improve AEM's approach to marketing and recruitment activities, this drives:

● Better value for money of their advertising, marketing and recruitment activities

● Better value for money in other adoption activities, by targeting engagement and support to adopters most likely to meet the needs of their local children

● Freeing up staff resource earlier than otherwise would have happened

● Avoiding expenditure on care placements through children leaving care sooner

● Fewer adoption disruptions and difficulties experienced by families

● The ability to meet local demand for adopters, particularly for hard-to-place children, as local placements have a higher chance of success due to existing support availability There will be non-financial benefits from this project, including:

● Culture change - data innovation: demonstrating the value locked in unstructured data could enable value to be realised across other LAs and types of unstructured data (e.g. this could also apply to other social care or special educational needs policy areas)

● Improved adopter engagement: this project could enable LAs / RAAs to be more inclusive in their engagement with prospective adopters, reducing any unconscious bias in material or engagements

5. Agreement with DLUHC

5.1 Please confirm that you commit to delivering the project outputs listed below. Please tick the box to agree.

- I agree

5.2 Agreements with DLUHC

Please tick the box to agree.

- I agree