Strategia Data Sciences

Developing solutions where it matters

Child Wellbeing - *My Friend*

AWS Build Accelerator Pitch

22nd September 2023

Stratēgia
Data Sciences

Breakthrough solution enabling social and environmental change that benefits society

Ver. 1.1d-09.23

Who is Strategia Data Sciences

Strategia Data Sciences (SDS) established in 2022 is a company that has been created to deliver Health/Education, Environmental and Sustainability initiatives through use of innovative technology.

The My Friend application is the first product to be built as part of an overall portfolio that we are developing to align with the company strategy of targeting children's Health/Education.

My Friend utilises AI & Machine Learning to create a unique interactive support platform for children's mental, social and emotional well-being aged between 6-18 years of age and across all social/ethnic groups through conversational interaction.

Use of My Friend on an ongoing basis will also positively contribute to both school pastoral care support functions and parents/carers while reducing the strain on the existing mental health systems.

We introduce

My Friend

Today's problem

Globally most nations are struggling to support Child Mental Health – poorly funded with long waiting times for those referred

70% of children and adolescents who experience mental health problems have not had appropriate interventions at a sufficiently early age [1]

Mental health disorders among children are described as serious changes in the way children typically learn, behave, or handle their emotions which, if undetected and not treated early, cause distress and problems getting through the day

- **20%** of children aged five to sixteen are likely to have a mental health problem [2]
- **50%** of mental health problems in adults are established by age 14 [3]
- Just over **1 in 3** children and young people with a diagnosable mental health condition get access to NHS care and treatment [4] with a waiting list of up to 2 years
- **10%** of children and young people (aged 5-16 years) have a clinically diagnosable mental health problem [5]

1. - Children's Society (2008) The Good Childhood Inquiry: health research evidence. London: Children's Society
2. - Mental Health of Children and Young People in England, 2020
3. - Future in Mind, The Children and Young People's Mental Health and Wellbeing Taskforce's report 2015
4. - NHS Five Year Forward View for Mental Health dashboard
5. - Green,H., Mcginnity, A., Meltzer, Ford, T., Goodman,R. 2005 Mental Health of Children and Young People in Great Britain: 2004. Office for National Statistics.

Who is My Friend for?

A strong interlinked and supportive ecosystem ensuring the child is first and centre

Putting Children FIRST

My Friend for children enables improved wellbeing, health and performance through emotional and mental support.
My Friend directly offers children comfort and stability to reduce anxiety.

For Schools

My Friend offers:
Teachers – support by providing data and information for them to analyse and assess for any concerns or risks whilst freeing up time for teaching
Counsellors – support through greater resources thereby enabling their focus on the more severe situations
School Governors and Leadership Team – clarity of procedures, increased staff and student satisfaction and ultimately stronger performance/ results
Recent Government policy is outlining that all children in school should receive a level of pastoral care, this is a big overhead for schools and where My Friend can help

For Parents/Carers

My Friend provides parents and carers with the comfort of knowing their child can receive 24/7 pastoral care with required sensitivity and objectivity
Parent Panel is established to enable a secure feedback loop to ensure product and service continue to improve and fulfil the needs of the three stakeholder groups.

Unique Selling Point

- Putting Children first with wide accessibility to all through the school.
- Provides a friend to the child who can talk openly without fear of rejection or reprisals.
- Voice based conversational mental well-being tool with added AI features that incorporate voice and emotional recognition associated to the child.
- Allows for the child to be spoken to with the right focus on the emotions being portrayed, therefore providing better outcomes and solutions.
- Auditable data capture in a secure environment (essential as you would expect for child and medical data).
- Potential to reduce the need for Health Services and ease waiting times by children using the tool to self-improve their wellbeing.
- An avatar that has been created to support, provide positivity and safe responses through defined programming
- The platform has been designed to be age group specific, with our starter age group between 8-12 years old, we are already working on other options to cater for older child/teenage/young adult groups, but also see the generally forgotten older age group 60+ as a key market opportunity for this tool

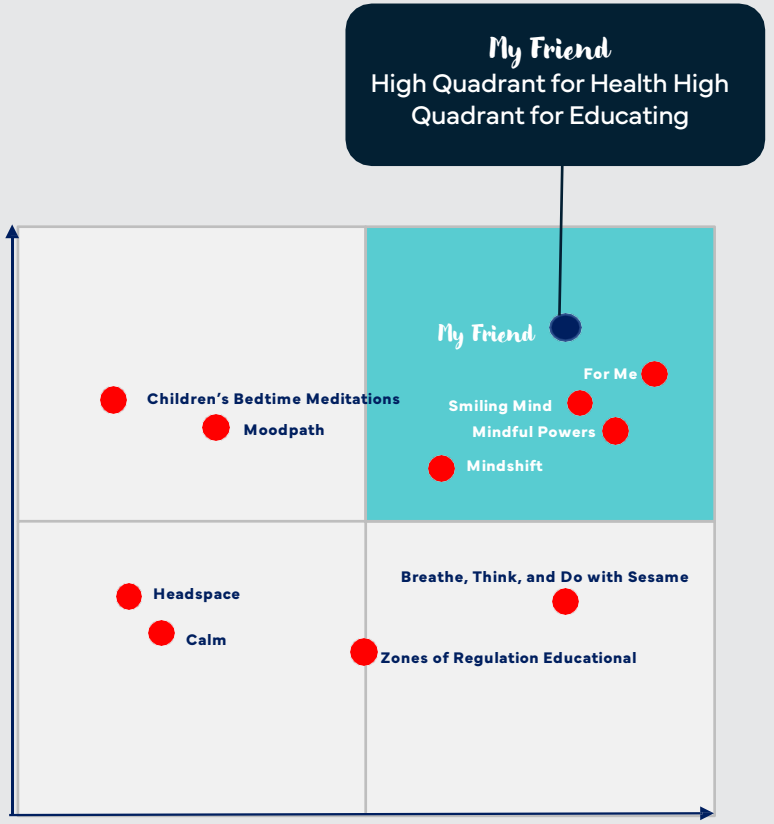
Competition Analysis

My Friend not only sits within a quadrant for high health and educational care, but also offers the capability of providing in-house services that would benefit a child on an ongoing basis.

In addition, a key USP for My Friend is that it is the only product in this marketplace to offer a conversing platform (not textual based).

We do not insert in-app purchases or work with sponsors or have associations with other businesses that would charge a fee for their services

1. **My Friend** is a unique tech application using advanced technologies around AI, ML and generative AI to build a support platform that intuitively communicates through direct conversation
2. Additional age groups all the way through to adult and aged users will be added to the platform to assist all levels of society
3. Option to provide through healthcare insurance is an additional servicing option to users



Competition Analysis

Mindshift: App is based on to help young adults cope with anxiety, by acting as a portable coach that guides users through challenging situations. This app teaches users how to relax and helps.

Headspace: Guided Meditations and Mindfulness takes a calm, relaxed approach to bringing calm relaxation into the lives of adults and kids. It aims to keep children "calm and focused" through short meditation exercises.

Moodpath: Is an interactive depression and anxiety screening program. This app tracks psychological, emotional and physical health over a two-week period in order to generate a personalized mental health assessment that users can discuss with their physician or therapist.

Smiling Mind: Is designed to help people pressure, stress, and challenges of daily life. This app has a fantastic section on Mindfulness in the Classroom. An especially good choice for the younger users out there, as it was created specifically with students in mind. Smiling Mind offers programs for a variety of age groups, including 7-9, 10-12, 13-15, 16-18 and adults.

Breathe, Think, and Do with Sesame: An app that helps kids learn to deal with frustrating situations using the "breathe, think, do" method. They'll learn to take long, deep belly breaths to calm down, think of a few strategies to handle the problem, and then do those things. Even young children aged two to five can become more aware of their own emotions.

Calm: Is the perfect meditation app for beginners, but also includes hundreds of programs for intermediate and advanced users.

Mindful Powers: Is one the best mindfulness app aimed at children aged between 7 and 10. The technique of mindfulness has been very positively received by many of those who have taken the time to learn and practice it. Adults have embraced mindfulness apps to aid their learning and practice.

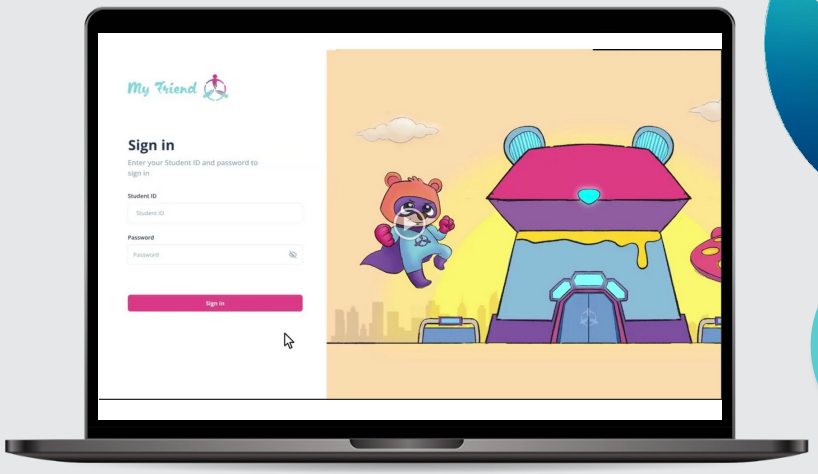
Children's Bedtime Meditations: Anxiety, fear, and stress can lead to sleeplessness. Tiredness can amplify negative emotions. A vicious circle can form.

For Me: There are many different things than can impact a child's mental health. Even the most attentive parents might not be fully aware of any anxieties or problems that their children might have.

Zones of Regulation: Is a sense of style and fun to engage children with this app with occupational therapist's influence to guide children towards better control of their emotions. Children identify a coloured 'zone' that they are in which corresponds to different groups of emotions. The app then guides children through these emotions and how to deal with them.

My Friend

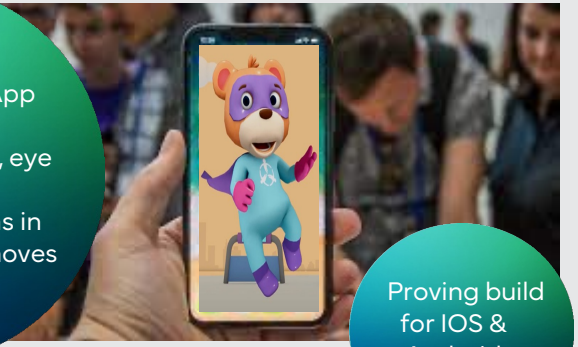
MVP build is featuring Kano our super-hero teddy and pet puppy Buddy at his spaceport



MVP

Secure sign-in to ensure user safety and that data is compliant under data privacy laws for children and regulatory requirements for educational and medical records

Animation in the App includes Hand movement, lip sync, eye movement
And the puppy joins in with some playful moves



Proving build for IOS & Android deployment

The Technology

Application of AI/ML

The following slide outlines the schema of our system architecture and the elements that link together

My Friend will fully utilise machine learning, generative AI using ChatGpt 3.5 from open-ai to develop conversational dialogue and learning into our AWS Sagemaker modelling. As part of the transition from open-ai we use the functionality of AWS Polly and AWS Transcribe through our AWS cloud platform

We believe our platform will help bring a more positive impact for child mental health and well-being. A conversational based Avatar allows the child to form a friendly, positive relationship that allows comfort, but also learning experiences and support for their well-being.

With a combination of supervised and un-supervised learning models we intend to understand the progressive changes in a child's mental development and provide cues to make sure the avatar's responses bring a positive feeling at the end of each conversation.

Our platform will learn from past conversations and adjust the responses accordingly in order to always ensure the right support is available. The platform has been designed to be age group specific, with our starter age group between 8-12 years old, we are already working on other options to cater for older child/teenage/young adult groups, but seen the generally forgotten older age group 60+ as a key market opportunity for this tool

MVP Focus Areas:

1. To reduce latency for text-to-speech and speech-to-text conversions for near real time response
2. Deliver the open-ai conversation to our React front-end via Polly & Transcribe
3. Create the Open-ai avatar model with the character set we have defined
4. Build out supervised machine learning model based on psychologist input for avatar-child interaction
5. Scalability and concurrency optimisation
6. Security and Compliance implementation
7. Refine the open-ai responses to factual and positive messaging
8. Finalise the back-end storage and data modelling
9. We believe this AWS program with the background of building an MVP can support us through the early stages of moving from a technology idea to a solution that can be investor backed and provide delivery certainty and enhance the capability for the product as we go through our pilot to a successful productionised outcome

The Technology

AI/ML

AWS Sagemaker/Open-ai – Machine Learning Model Building and Deployment

NLP

AWS Transcribe/Polly– Voice framework for our conversational interface

Hosting

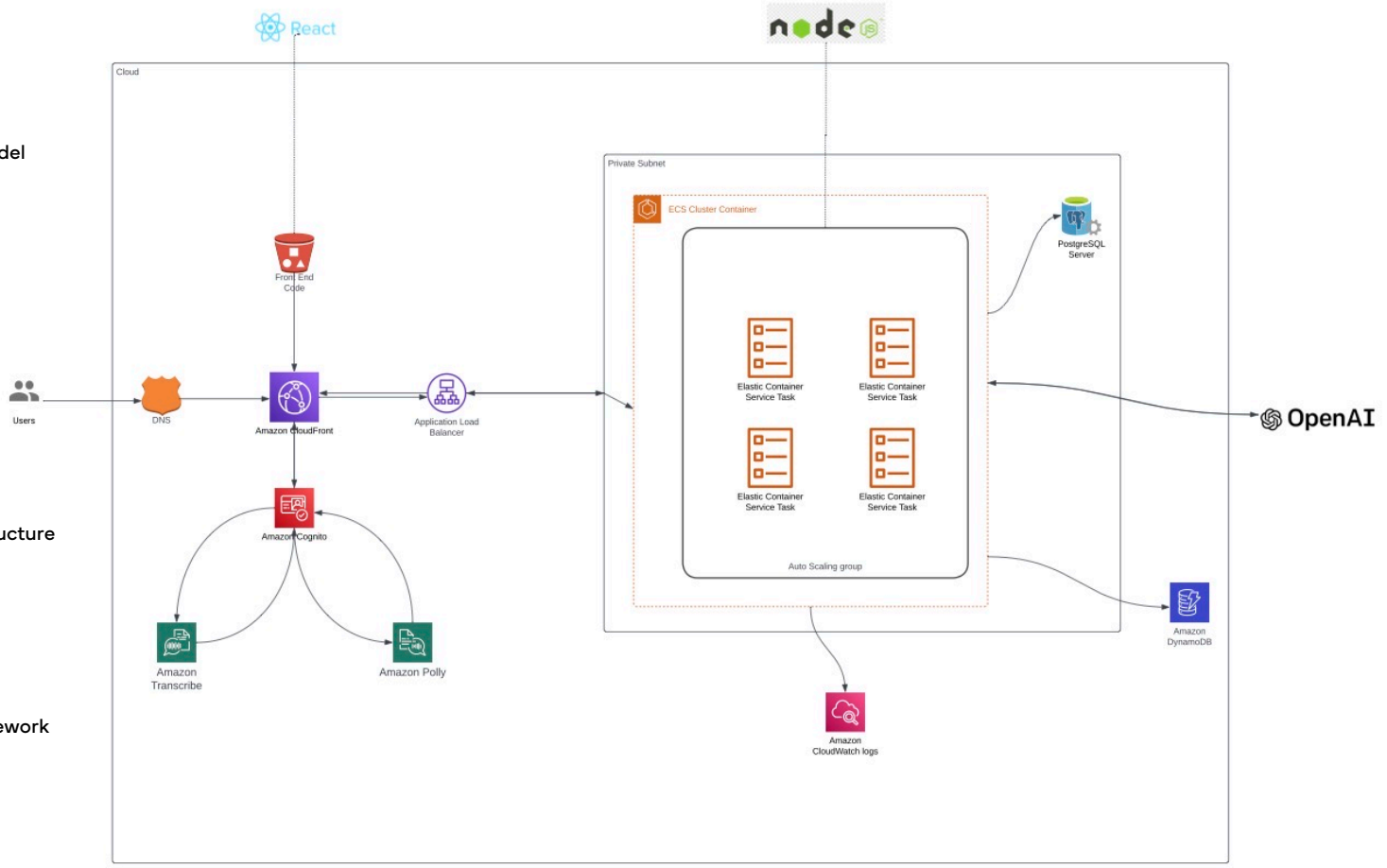
AWS Global Infrastructure – Best in class infrastructure platform and can handle any workload

Back-End

Node JS – Robust back-end web application framework on which our team has strong competencies

Front-End

React – Front end framework



Key features

The Machine Learning Process

Using generative AI through ChatGPT turbo 3.5

Attaining localised data from previous learned instances within AWS Sagemaker

Cleansing, validating and verifying data from ChatGPT to allow us to build within our own internal ML framework with AWS Sagemaker

Constant update and build of our algorithms and API's is key to deployment of our model

Continuous testing and improvements with the responses and outputs from our AI model to create improved learning and responses

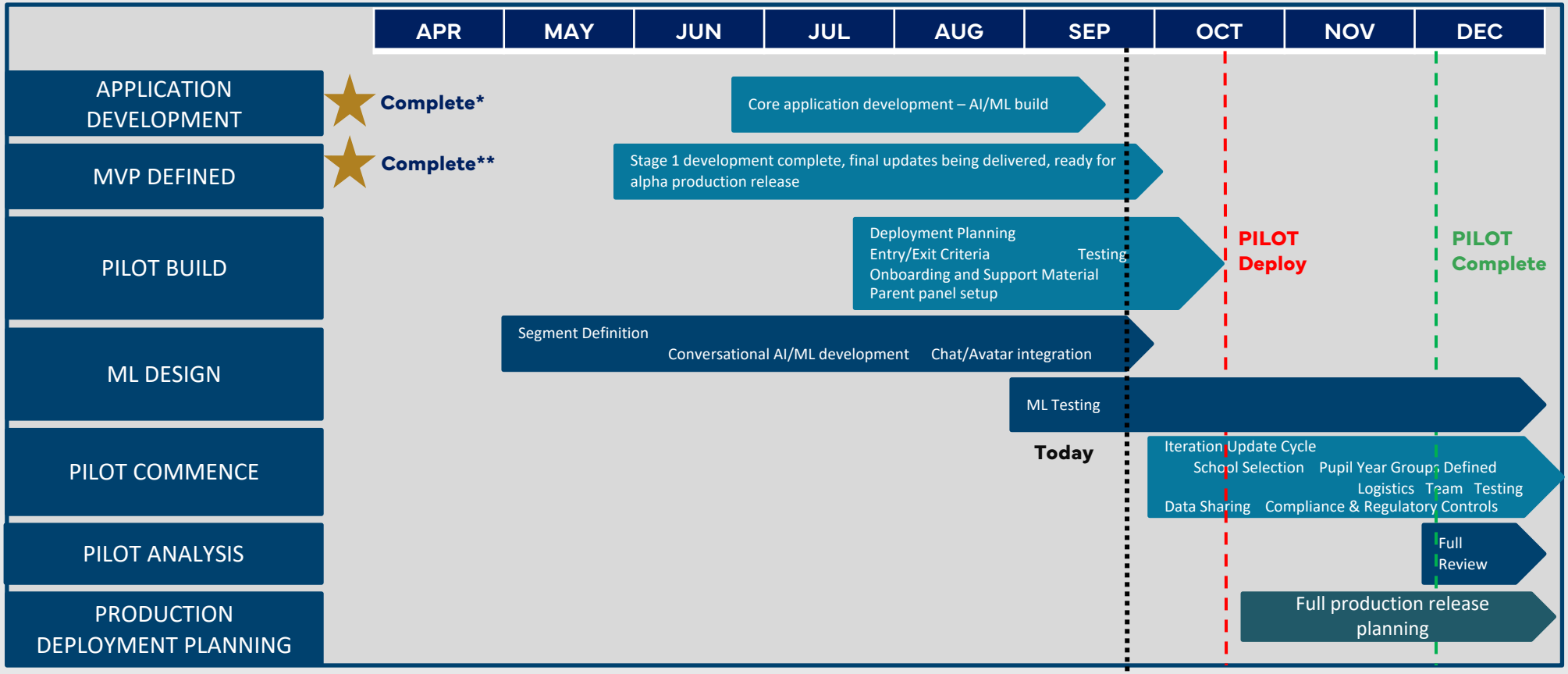
The ML outputs and responses viewed through our avatar to the end user they are conversing with

Machine Learning
Machine Learning (ML) is a type of Artificial Intelligence(AI) that allows software applications to become more accurate in predicting outcomes without being explicitly programmed to do so. ML algorithms use historical data as input to predict new output values.

ML is important because it gives a view of behaviour and mental patterns of an individual or an entity. Over time the algorithm learns to become more accurate in its predictions/analysis. Our model is based on continuous learning of the end user, so conversation becomes more specific to their needs and therefore enables positive support and help

High Level Timeline

High Level Task – MVP TO PILOT for 2023



* Prototype build completed and proven

** Continuous cycle and updates as product is deployed

Leadership

Stephen Sharp - Chief Executive Officer

With a proven track record with 35+ years of experience in delivering large-scale and complex technology initiatives across a range of industry sectors, Stephen has global experience gained from working in the UK, USA, Russia, South Africa, Australia and the Far East.

Stephen has held executive roles at a number of major investment, and retail banks as well as building and then selling his first venture into software development back in 1988 – this company developed software designed using 4GL databases and programming languages such as Pascal, C++ and a range of innovative solutions for the time.

Stephen is a founding director of Strategia Advisory that has created a global consulting business based in the UK, UAE and Australia, with a range of clients across Finance, Healthcare and Insurance

Angela Heward - Chief Risk Officer

Angela has 30+ years of major program delivery experience in a variety of senior risk, technology, operations and change management positions with a proven track record of leadership, client management, relationship building and delivery excellence; specialising in the development of executive board strategy from vision to implementation as well as building strategic regulatory and compliance processes to ensure future sustainability and compliance across varying sectors .

Andrew Sacks - Chief Financial Officer

Andrew is a Fellow of the Institute of Chartered Accountants in England & Wales. For the last 20 years, Andrew has enjoyed a successful professional career in the corporate sector.

This has involved a diverse range of advice to businesses but includes strategic advice, cost restructuring, sales strategy, contractual issues as well as a range of financing issues from refinancing and injection of new finance into the business. Andrew has worked both in the UK and abroad on a wide variety of projects and has been a non-exec on several boards working in a diverse range of market sectors

Omer Aslam- Chief Technology Officer

Omer is a seasoned CTO and distinguished technology leader with over 15 years of experience in designing and architecting robust, highly available, and intelligent systems. Omer's skills encompass complex software solution development, strategic direction, software architecture, and successful implementation. He is also well-versed in tech advisory, MVP development, and cutting-edge technologies like AI/ML and AR/VR.

Throughout his career, Omer has held influential leadership roles in tech companies based in the US, UK, and UAE consistently delivering exceptional results. With his visionary leadership, technical proficiency, and unwavering commitment to innovation, Omer is well-positioned to drive success in our organisation and shape the future of our technology landscape.

Glenn Canterford - Chief Educational Advisor

Glenn has more than 30 years' experience working in international education. He has held positions of responsibility in schools in Africa, the Far East, South America, Southeast Asia, and the Caribbean. His most recent post was as Principal of The Sultan's School in Oman.

Glenn was awarded a Doctorate in Education by the University of Bath in 2009 and his work on Segmented Labour Markets in International Schools has been cited on numerous occasions.

Glenn has a proven track record with regards to school improvement and has led a number of establishments through accreditation with the Council of International Schools (CIS) and the New England Association of Schools and Colleges (NEASC). He is also a visiting team leader for CIS.

Liz Whiu – Director – Customer Experience

Liz has 30+ years' experience in strategy, branding and customer experience working with startups and global organisations alike spanning finance, hospitality, aviation, property, health care and education sectors.

She has a breadth of experience as managing director at a branding and marketing agency and prior to this in a senior strategy roles in aviation and travel companies with a specific focus on customer research and service standards.
Liz has led various multi-hierarchical and multi-functional teams to develop strategies, systems and creative solutions whilst coordinating partners and suppliers across leisure, corporate, industry and governmental partnerships.

Q & A

Our Questions to AWS

1. What does the AWS Build Accelerator Program mean for us?
2. Is AWS able to peer review our product as part of the Build Accelerator Program?
3. What early access to new technology do you have to help our product become more attractive and appealing to our young users and be “cool” to use?
4. How can you help us scale AWS cost efficiencies from day one?
5. What assistance can AWS provide introducing potential funding sources and at what stages do we approach them in the development process?

Thank You

What are the next steps?