

TEDI-LONDON SUMMER SCHOOL 2020**CASE STUDY: INTERDISCIPLINARY****PROJECT
AIBLE****DELIVERED BY
THE AIBLE TEAM**

An international, interdisciplinary group from different universities participating from Australia, China, Ireland, South Africa, the USA and the UK, the AIBLE team blended expertise in fields including architecture, engineering, neuroscience, medicine, management and French to fulfil the project brief.

BRIEF

Design and prototype an innovative solution that harnesses AI and big data technology to enhance the wellbeing of people with dementia and their caregivers, then pitch the idea to an industry panel.

PROJECT OVERVIEW**CONTEXT**

An estimated 50 million people worldwide are living with dementia and this number is likely to double every 20 years. In the UK, dementia is causing a large social healthcare burden, costing the NHS £4.3 billion each year. Moreover, the AIBLE team's research revealed that 64% of family and friend caregivers reported a lack of knowledge within the healthcare sector of the particular needs of people living with early-stage dementia.

Noting the urgent need to reduce the impact of dementia on the NHS and improve support for people with dementia and their caregivers, the AIBLE team pooled their considerable cross-disciplinary knowledge and turned to technological innovation – specifically artificial intelligence – for a solution.

THE BIG IDEA

AIBLE

An AI-based software solution designed for, and with, people living with early-stage dementia. AIBLE utilises the unique personal connections attached to daily activities to build and refine a persona for each user that optimises independent living.

Targeting the entire early-stage dementia community of the UK, AIBLE helps users to complete daily tasks with personalised



prompts. This means that people living with dementia and their caregivers can upload multi-sensory cues such as photographs, music and personal information to prompt memories linked to certain everyday tasks.

Drawing on ongoing feedback from the user community, AIBLE's recommendation engine is refined over time using AI, leading to the delivery of supportive content tailored to each user. Driven by the broad skillset of the AIBLE team and the diverse experiences of the user community, this solution embodies TEDI-London's commitment to harnessing expertise from a wide range of disciplines to develop innovative solutions.

APPROACH

The AIBLE team divided the project into six phases:

1 PROBLEM SOLVING
Defining key issues, forming sub-teams, undertaking desktop research, analysing initial ideas and producing a draft proposal.

2 INITIAL PROTOTYPING
Expanding the project brief, distributing a market research survey, revising user requirements, creating the initial AI architecture and devising a wireframe app interface.

3 BUSINESS PLANNING
Integrating initial feedback and devising a marketing plan and business model.

4 ITERATION
Refining the user interface, user documentation and business model in line with input from prospective users, industry experts and mentors.

5 PITCH PREPARATION
Preparing the final presentation and business model.

6 EVALUATION
Delivering the final presentation to secure resources to launch AIBLE.

In their self-evaluation, the AIBLE team reported that their project management timeline proved to be both realistic and effective, with a mix of weekly and ad hoc sub-team meetings creating consensus and mitigating the impact of unexpected developments. They implemented weekly work sprints and allocated tasks appropriate to individuals' knowledge and experience in order to complete and review group assignments within submission deadlines. Towards the end of the project, they departed from the sub-team structure to undertake group pitch preparations and practice.

Designing and distributing a neurodiversity survey for people with dementia and their caregivers at an early stage brought essential clarity and momentum, and – combined with extensive secondary research from existing literature – gave the team the confidence to pursue an ambitious design solution tailored to users’ needs.

In order to optimise their final pitch, team members connected with industry mentors via their professional networks, using these alternative perspectives to refine their product, business model and pitch deck. The result was a smooth, concise and digestible final presentation – fitting comfortably within the time limit and delivering key information as planned.

From start to finish, deploying a wide range of skills connected to their diverse backgrounds enabled the AIBLE team to combine thinking tools and dementia-friendly frameworks to create a desirable and viable solution to the design challenge. Their achievement epitomises TEDI-London’s commitment to creative innovation through interdisciplinary collaboration.

DID IT WORK?

The AIBLE team described the project as “a great success” because their solution responded to a real-world problem and proved highly desirable to prospective users. They reported numerous positive outcomes resulting from an interdisciplinary approach that generated fresh insights and allowed individual skill sets to shine, stating:

- The team felt proud to have developed a product that is distinguished in the assistive technology market by its ability to grow alongside users, promote independence, monitor dementia progression and delay the onset of later stages of the condition.
- Time constraints and unexpected challenges thrown up by research and feedback were overcome by adhering to the project timeline and reviewing working methods at regular intervals.
- Development of the business model went well, thanks to seamless collaboration between the clinical and business sub-teams.
- Invaluable input from mentors not only facilitated the development of AIBLE, but also contributed to the creation and delivery of a compelling final presentation.
- Although the group did not establish any ground rules to guide behaviour, team members demonstrated maturity and emotional intelligence in adapting to circumstances beyond their control.
- Every AIBLE team member contributed significantly to project areas within and outside their degree expertise, demonstrating the group’s willingness to learn from their peers and underlining the value of interdisciplinary collaboration.

“We are pleased to have developed a solution that uses interactive intelligence to adapt to the user’s needs as their condition progresses.”

THE AIBLE TEAM

KEY LEARNINGS


The AIBLE team's self-evaluation revealed that their TEDI-London Summer School experience provided useful lessons for the future. In brief:

- Be aware of a project's time constraints and monitor your progress at regular intervals, then be prepared to revise your plan and adjust your expectations in order to remain on course.
- Create a culture of trust through open communication, ensure that everybody has the opportunity to be involved in decision making, and delegate tasks in line with people's strengths and areas of interest.
- Be willing to revise your organisational structure in line with feedback and unexpected challenges.
- If you are working across time zones and accommodating personal schedules, develop a flexible organisational structure that uses sub-teams and online collaboration platforms. Also schedule at least one weekly team meeting to compile updates and vote on major project decisions.
- Ensure that your team produces thorough and consistent documentation throughout the project, as this will inform the evaluation process and make it easier to draw swift and reliable conclusions.
- If you are working in the field of AI and big data, be sure to balance technical specifications with equally important work around ethics and privacy.

“This team demonstrated the value of diversity in creating a great project. Their mix of disciplines and cultures led to a well-thought-through and integrated solution, and it was great to see them develop new skills by embracing peer learning and interdisciplinary working.”

DR SARAH CAMPBELL – TEDI-LONDON SUMMER SCHOOL DIRECTOR, 2020

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