



DurHack 2019 Challenges

Challenge 1: Bank in a Box

Challenge 2: Atom Hears a Who

22/11/2019

Atom in the Community Equality, Diversity and Inclusion

Pushing for Parity

"Giving women the skills to redress the balance of gender representation in technology."

TechMums, Institute of Coding, Stemettes, Tech Talent Charter, Women in Finance

Building the future

"Nurturing and inspiring the next generation of STEM talent."

Prince's Trust, Firetech, Raspberry Pi, CoderDojo

Tacking today

"Addressing the issues we face today and integrating with our local institutions."

FinTrust partnership, Atom incubator, Durham University, and more.

Supporting our home

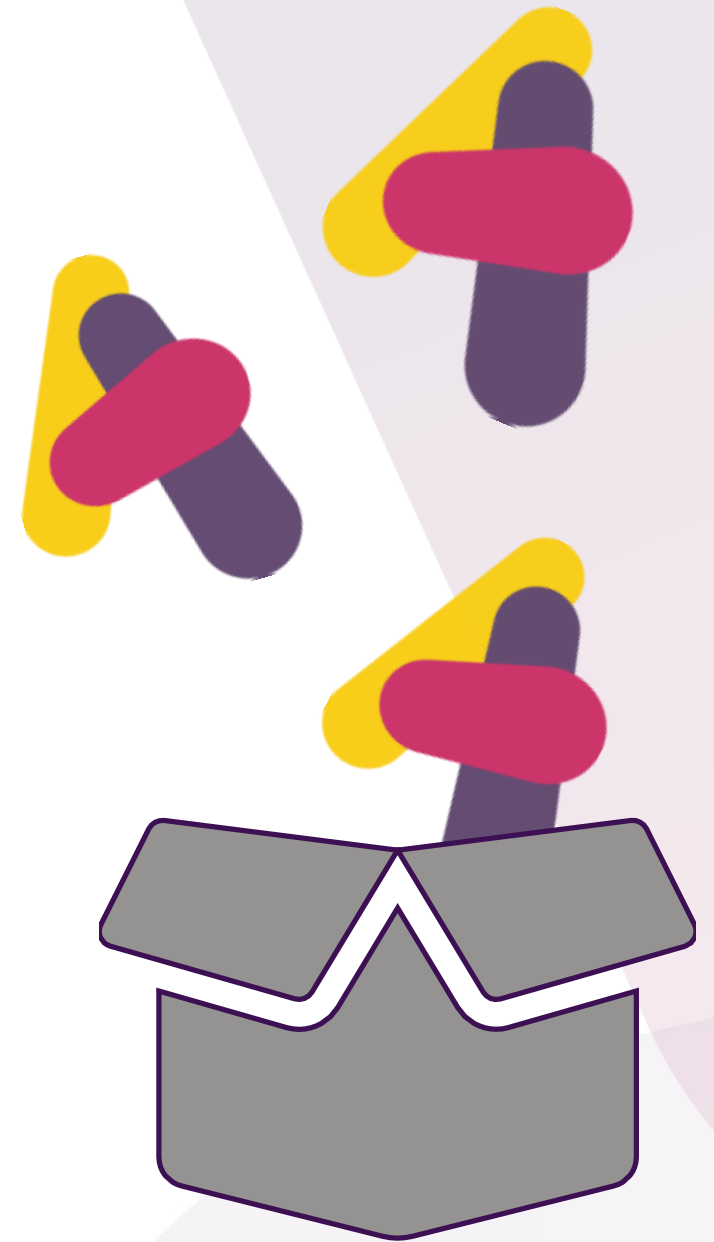
"Being a visible and engaged part of our North East community."

Durham Book Festival, Durham City Cricket Club, Lumiere, and more.

Challenge #1

Bank in a Box – by Brian Jobling

- There has been quite a lot of publicity lately including lectures at **Google Next** about the Atom Bank stack.
- We are moving the bank to an event-driven architecture using a number of technologies.



Kafka

Golang

Kubernetes

MongoDB

Cassandra

PostgreSQL

Docker

MuleSoft

Python
+
Django

ReactJS

Kotlin

Swift 5

Flutter

GraphQL

Airship

Bank in a Box

Putting all of these packages together to form a bank is not an easy concept as we tend to find systems have difficulty communicating with each other.



Bank in a Box

Putting all of these packages together to form a bank is not an easy concept as we tend to find systems have difficulty communicating with each other.

Bank in a Box – by Brian Jobling

Current accounts are simply accounting ledgers with debits and credits which have been around for hundreds of years.

Challenge: If you were to start a current account without any boundaries, using the Atom bank technologies and the information available to a bank, in terms of our customer's spending patterns and data, what would you like to see from the next generation of current account?

We will be looking at

- how you built the ledgers to handle transactions in your event-driven environment
- what information you would display (and why) to enhance the way you interact with your money in a visual format.

If possible, I would like you to use **Google Flutter** as your Mobile framework and **Golang** as your API backend, but it is not a requirement nor essential.

Bank in a Box Technologies

- Kafka - Stream processing
- Golang - Microservices
- Kubernetes - Container Orchestration
- Docker - Containers
- MongoDB & Cassandra - NoSQL databases
- PostgreSQL - SQL database
- Mulesoft - APIs
- Python including Django Frameworks - Business Banking Broker Portal
- ReactJS - Website development
- GraphQL - Website database
- Airship - Notification/email/SMS SaaS
- Swift 5 - iOS Mobile
- Kotlin - Android Mobile
- Flutter - iOS/Android Framework which we are experimenting with



Challenge #2

Atom Hears a Who

by Michael Sherwood and Alyona Medelyan

To be the most **customer
centric** bank on the planet....

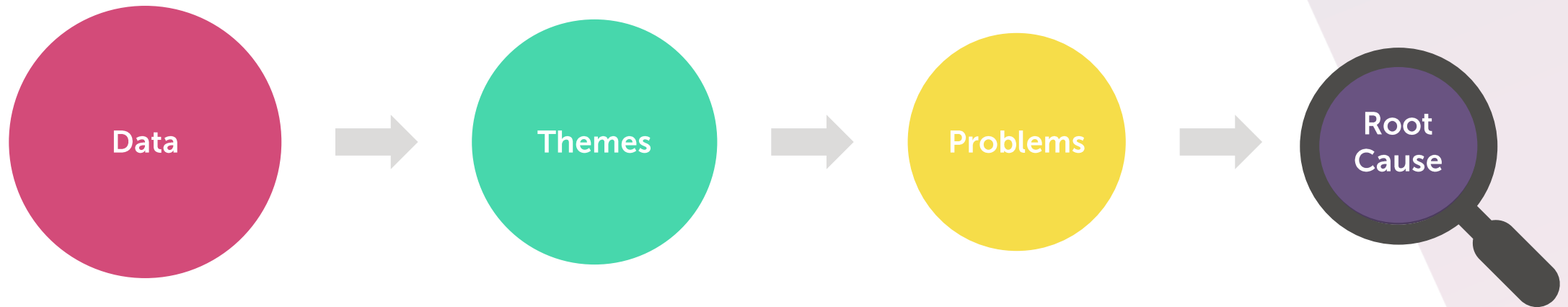
Atom's vision



Atom's voice of the customer program



Atom Hears a Who



So put simply, we take data captured via the customer, understand the themes, define the problem and conduct root cause with help from Thematic.

Atom Hears a Who

Challenge: What do our customers say?



Atom Hears a Who

Approach 1

Predictive and prescriptive analysis

Given customer feedback collected over the past 3-6-12 months (and analyzed using Thematic), can the themes and their distribution predict what would be the rating in the following month?

How can we prescribe a course of actions to get the maximum score possible in the following months, and what could that score be?



Atom Hears a Who

Approach 2

Customer segmentation

Customer feedback contains clear indicators of what matters to different customers. Some are price conscious, for others, convenience and ease of use is more important than pricing.

Can we automatically determine key customer segments from their feedback? What are these segments and their attributes?

Given a piece of feedback from a new customer, can we assign this person to one of these segments automatically?



Atom Hears a Who

Approach 3

Customer emotions

Here is a typical review of an Atom bank customer:

"Atom Bank. Saw this bank advertised in the Mail on Saturday and thought they offered a much better rate of interest on savings accounts than all high street banks. After a little bit of concern (never heard of them...) i decided to give it a go and open a fixed saver for a year. I downloaded the app on my phone and started the registration process. I had a small issue in that I left the process half way at the beginning and couldn't complete it when I tried again. I phoned their help desk and a very helpful lady (Katy I think) reset their system which allowed me to register and I then sailed through the process really easily. I was a little concerned, once I transferred money in as it didn't show up immediately, but I used their chat line and spoke to Danielle, who reassured me that the money would show up soon. Sure enough it did and now I have a fixed saver at a decent interest rate. I can't begin to say how refreshing it is to deal with people, who have got their customers interests at heart.. Highly recommended."

What kind of emotions is this person experiencing?

How can we automatically capture these and track how Atom bank is doing when it comes to evoking positive emotions (like trust) over time?



Check our Slack channel for more info!

Experience Prizes!

A week-long experience at Atom, getting under the skin of engineering, customer experience, risk and much more!

iwanttowork@atombank.co.uk

atombank.co.uk/careers