Becoming a Digital Retail Bank – What We've Learned on Kroo's Journey.

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Personal introduction

Alexey Gabsatarov, Chief Technology Officer and SMF 24 at Kroo Bank with over 20 years of expertise in building high-performance systems across social, payments, banking, and telecom sectors.
Most recently before joining Kroo I was building and running IoT and AI services at Soracom (Japan).

Kroo Bank

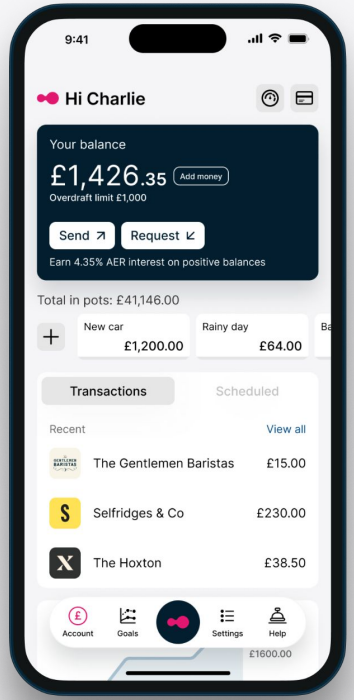
Simple banking, without distractions, that's good for your money.

Money management prioritised.`

Guiding customers to get the foundations right.

Simple, focused experience.

Fewer, yet more impactful features.



Financial benefits that make customers richer.

- Earn a savings rate, but paid on your current account.
- Free to open, no monthly fees, zero fees abroad.
- Low-rate overdraft.

Launched the Bank in 2022

Current account

- Fully regulated
- FCSA protected
- Fully featured
- Optimized UX

Valuable

- Market leading rate
- Market leading fees
- Focused on the UK

Ethical

- Tree planting
- Charitable projects
- Tech Zero

Nortable Kroo Architecture elements

- Cloud native
- Abstracted third party dependencies
- Microservices
- REST
- Event-driven
- Event sourcing

Are we a Fintech or a Bank

Fintech	Bank
Optimise for validated learning	Optimise for managing operational risks
Encourage experimentation	Manage and control change
Go fast, and fix forward	Minimise impact on operations
Build for today, through away on failure, scale on success	Build for M&A

Microservices

Architecture evolution phases	Benefits
Modular monolith	Scalable structure
Microservices	Scalable capacity, agility, autonomy
Event-driven and serverless	Loose coupling, on demand scalability
Platform	Efficiency at scale

Infrastructure as code

Adoption Scope	Maturity phase
Individual	Adopting (plan→apply)
Team	Adopting (plan→apply + VCS + CI/CD)
Teams	Standardising (modules + policies)
Organisation	Scaling (platform + self-serve + continuous validation)

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Scaling infrastructure as code

Shared nothing IAC	- IaC belongs with the services that use it - Local changes are really easy - just hack the terraform - Global changes require 150 PRs - Services gradually drift
Current state	- A number of modules abstracting common resources - Small number of policies - Service infrastructure deployment coupled with the service deployment pipeline
The goal	Abstracted service definition Decoupled infrastructure
The tool	- specification with aero (for flexible config) and malli (defines the specification schema) - translation layer in clojure turns aero (edn) into terraform json - captures the variations in our services in centralised code - allows unit tests for regression - Allows us to test blue/green migration on one service, then apply safely to other services - Allows deployment to a completely different env, or even backend (ie k8s)

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ML/AI adoption

Parallel activity	Internal	External
AI Strategy and Governance	Management Committee (quarterly) Risk and Compliance	Regulators: FCA, PSR, ... Event participation and training
AI Partnerships	Embedded AI development across the company	Academia Model providers Cloud providers Solution providers
Develop ML Ops practices	Data science MLOps pipelines	Model evaluation
Build and acquire AI Assets	Fincrime monitoring Customer support Unstructured data processing	Gen AI Chatbot

Accountability

- Accountability systemically bubbles up
- Erosion of accountability
- Over-reliance on processes, managers and regulators as "accountability syncs"
- Actively work on distributing and embedding accountability

The Unaccountability machine

Why big systems make terrible decisions and how the world lost its mind

Focus on intrinsic motivation

SDT Needs	Definition	Example practise
Autonomy	The feeling of being in control of one's own actions and decisions	Product and platform aligned independent squads
Competence	The sense of effectiveness and mastery in interacting with the environment	Stable squads with engineers acquiring deeper knowledge in the chosen domain and technology Promotion process rewards competence Quarterly OKR reset
Relatedness	The experience of connection and belonging with others	Weekly Tech Congress Daily stand-ups Pair programming

Thank you