

Pivoting Open Source
Fintech Solutions For Big
Players: Enterprise Ready
CBS based on Apache
Fineract.

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APACHECON
NORTH AMERICA



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NEW ORLEANS
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ABOUT ME: ROBERT JAKECH



LEVERAGING OPEN SOURCE: FINERACT



I have experienced how limited availability of services such as financial accessibility can spur on innovation & creativity.



But have also seen how this can be a huge drainage & frustrations for many others.

Conversation with Liz

- ❑ Future of Fintech
- ❑ Big Players have to pay attention
- ❑ Innovation revolutions coming
- ❑ Open Source will rule.

- ❑ NO WAY! Liz says.



Opensource: The Misconceptions



Regulations (This is beyond my control)

Security (Is it secure?)

Ownership (Who do I blame when things go wrong?)

I have huge Operations, will this support my business? Can it scale?

I am skeptical about all this Open source thing. I don't trust it.

FACTS 
 MYTHS



How Do you package the Information?

Regulations (This is beyond my control)

- ❖ Packaging is very key. How we present to the regulatory body is every important.
- ❖ What do they care about?
- ❖ How do they want it?
- ❖ Who is behind it?
- ❖ What are the numbers / stats to support it?



SECURITY

Vulnerabilities

Security (Is it secure?)

- Third party security experts (Pen testing, vulnerability scans etc)
- Leverage the tools like spring security
- Getting involved in the DevSecOps not just providing the CBS (Fineract)
- Showing them numbers / stats
- Remediation fixes

Who Do I blame?

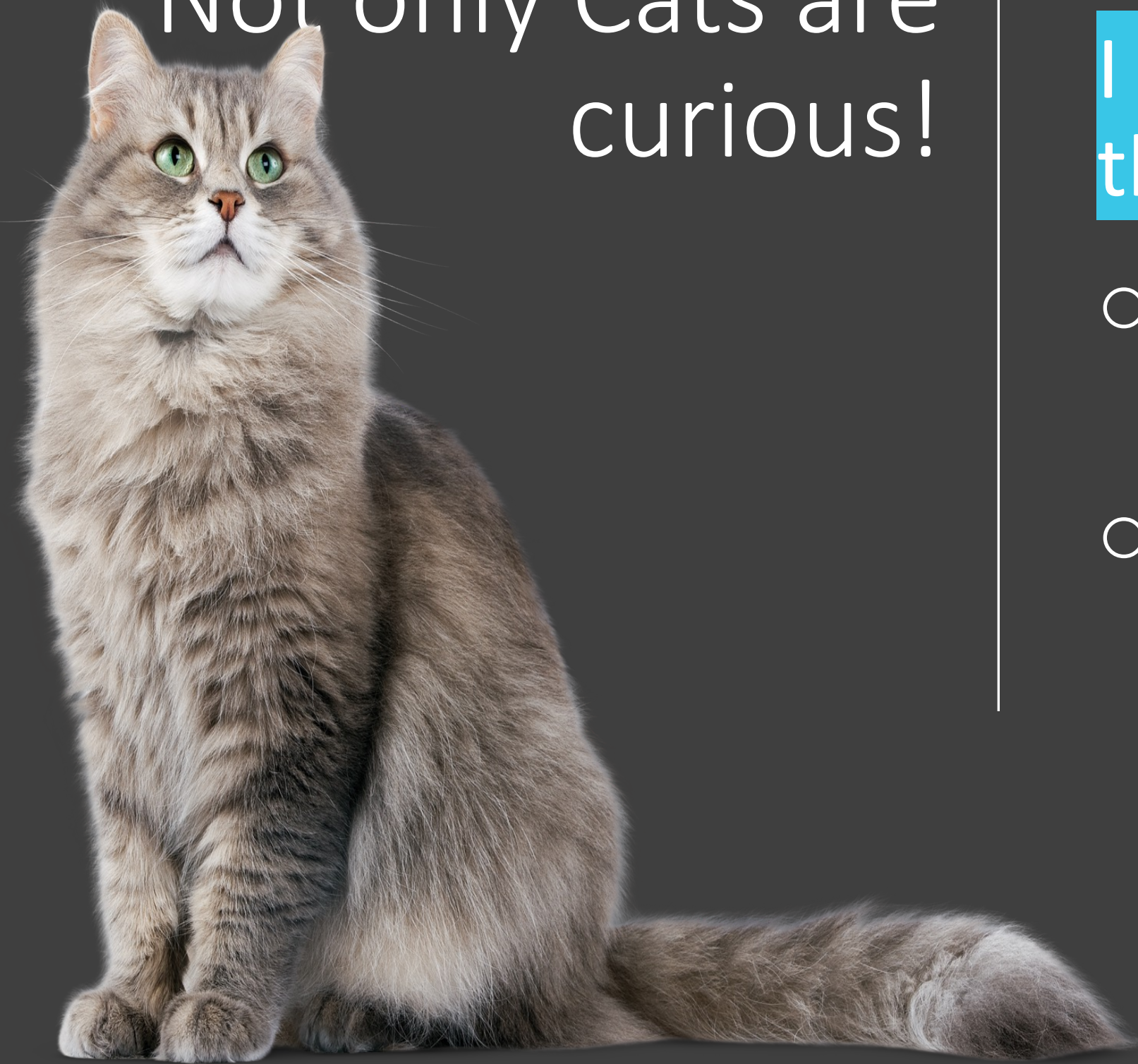


Ownership

- As they say, “No one gets fired for hiring Oracle!”
- Emphasis on Power of Many (Community)
- Emphasis on fast growth and adoption around the World(Stats)

125,058	154,568	95,054	124,500
125,487	56,845	97,511	125,000
124,000	110,000	99,011	154,000
	150,000	99,216	95,000
	35,000	101,090	154,200
		101,684	110,000
			89,000
			50,000

Not only Cats are
curious!



I am skeptical about all this Open source
thing. I don't trust it.

- Let's spike this. Let's try this out with a
product. Let's have external audit / review
- Finlab would be a great place.

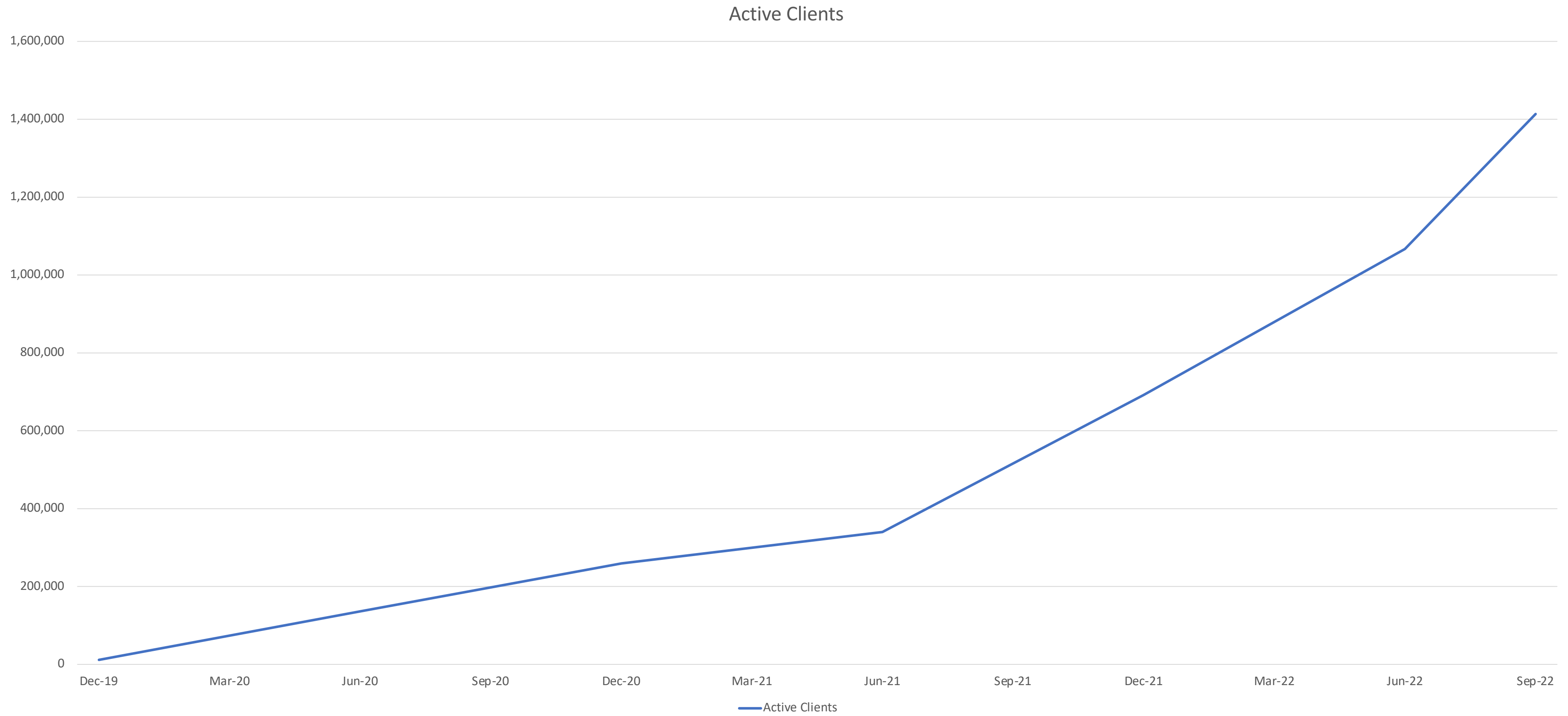
I need something
Robust, Scalable



I have huge Operations, will this
support my business? Can it scale?

- Let's perfect the wheel. Where's the biggest bottleneck? Can we refactor? Can we rewrite?
- What's your deployment (DevSecOps) strategy?
- Revisit the architecture and make changes to fit
- Multitenancy scaling

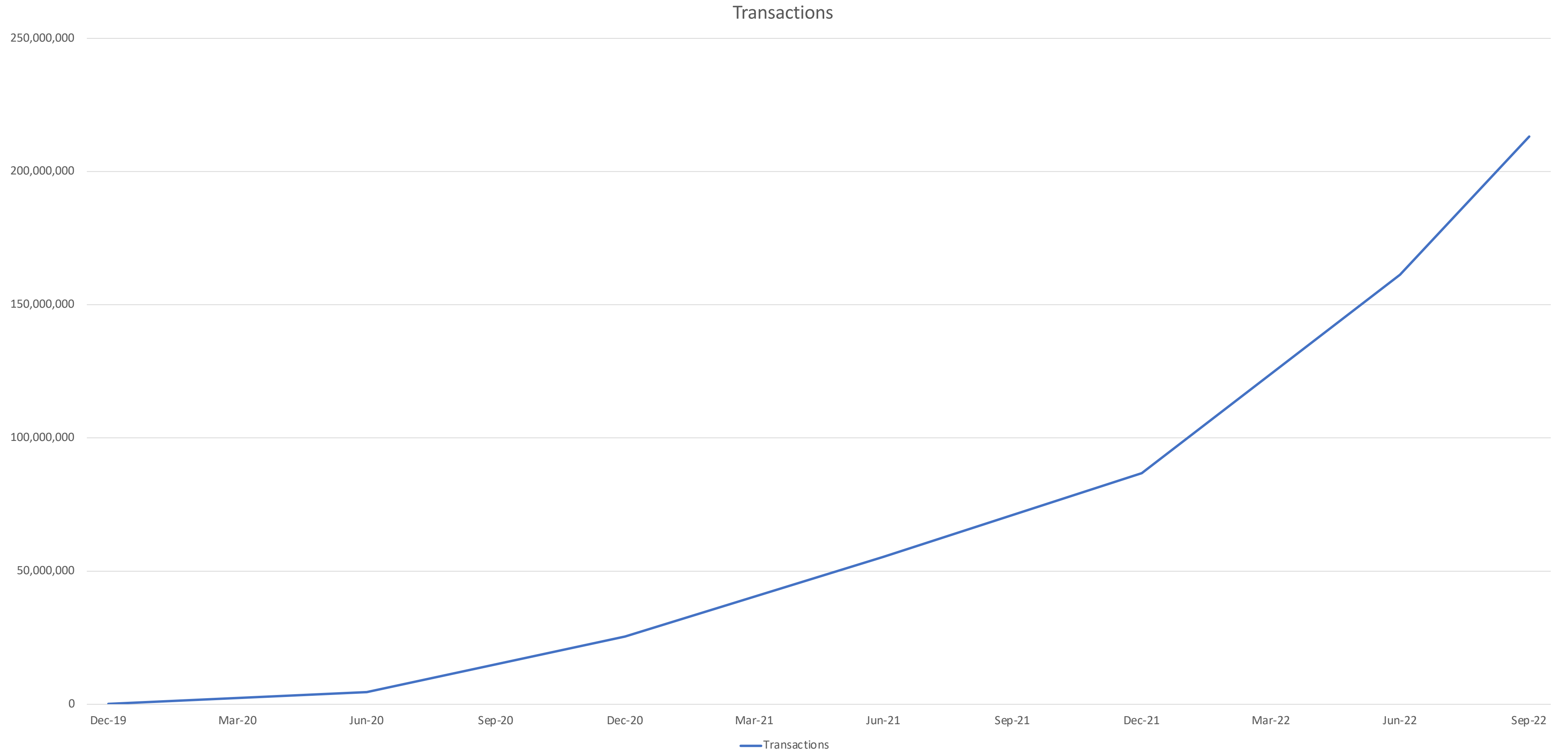
Client is a fully operational Bank, providing Fineract As A service for their customers which includes Merchants, Traders, Sports Companies, Wallets etc.



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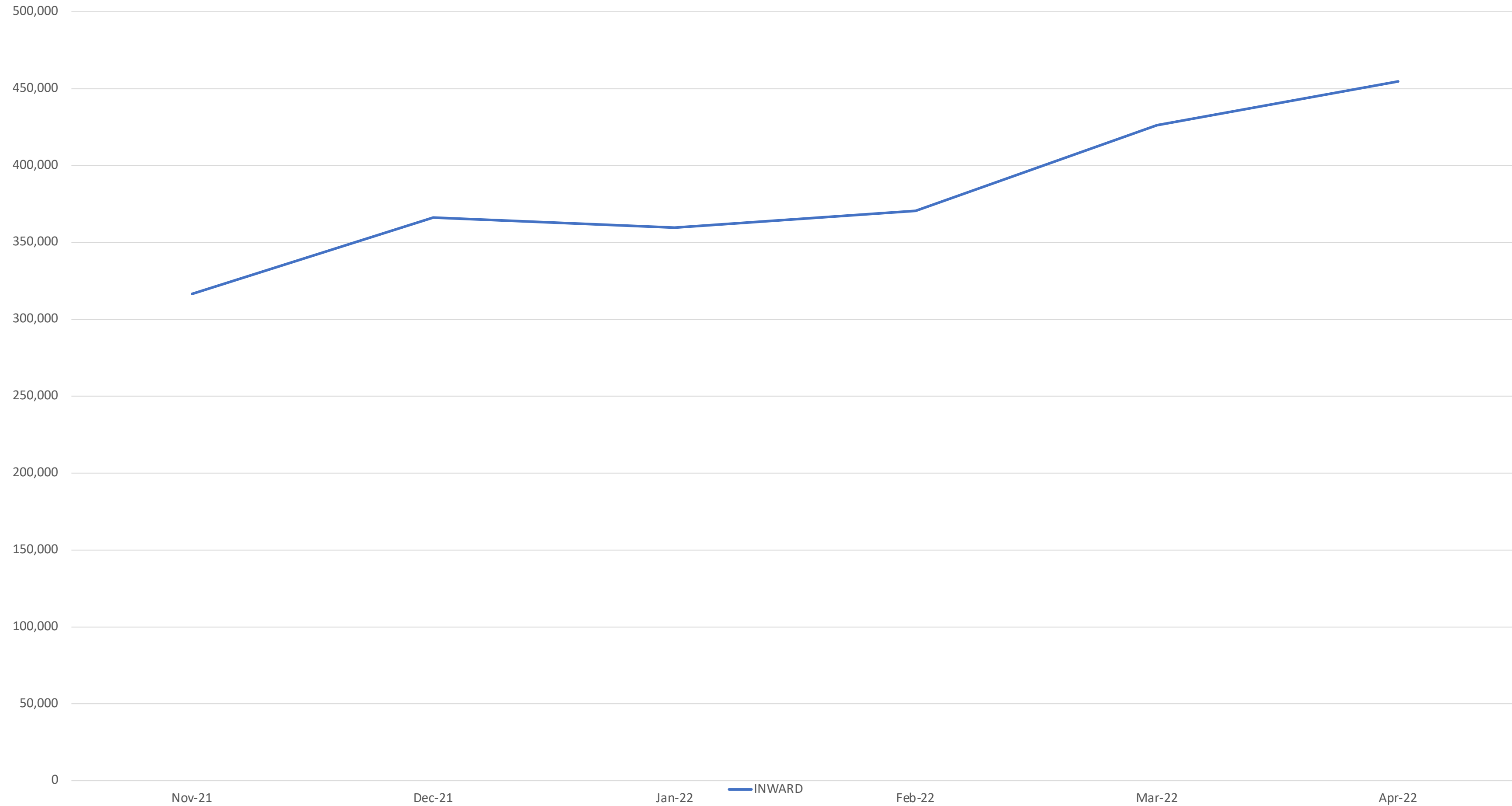


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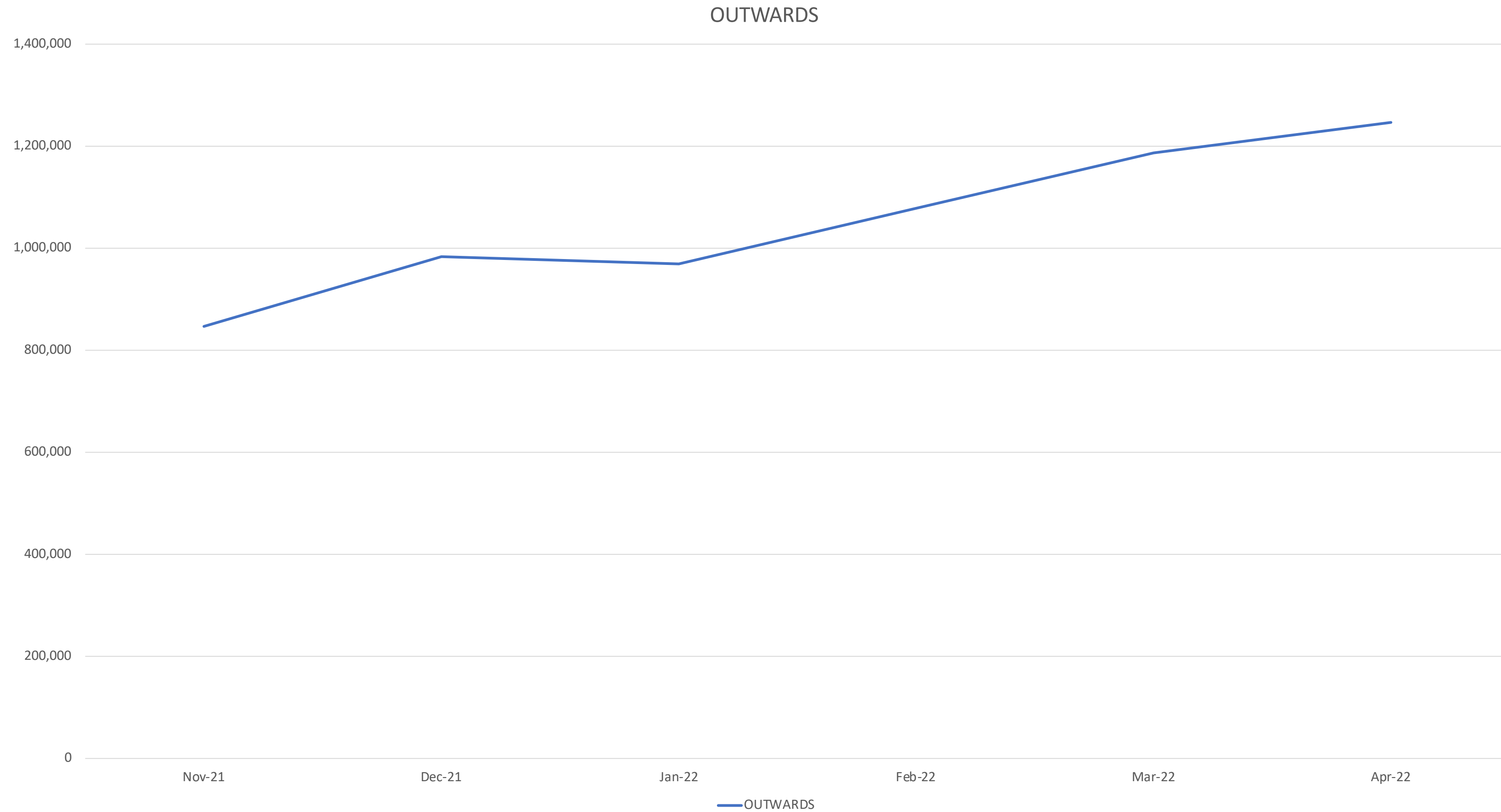


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INWARD



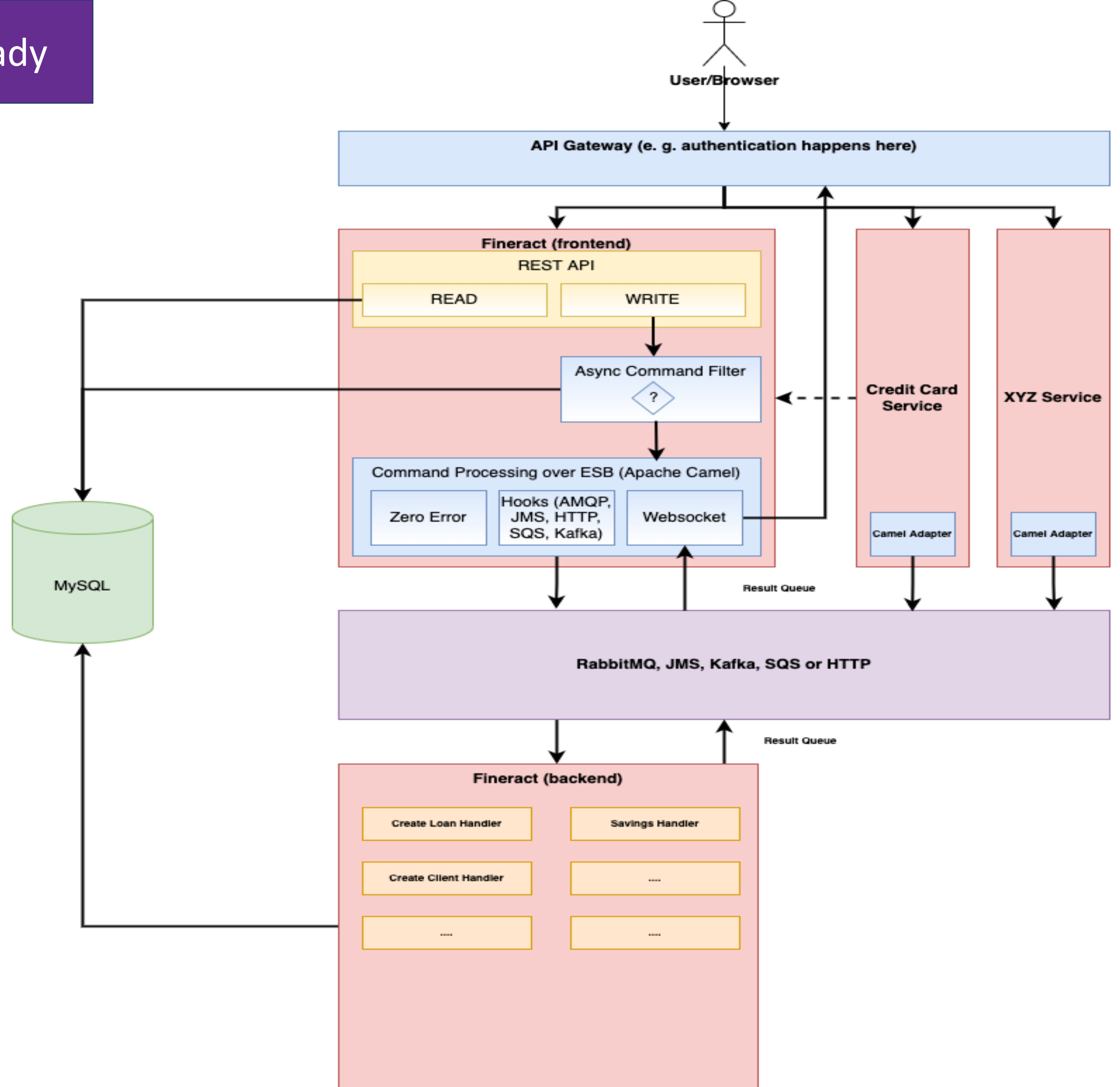
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Use Case

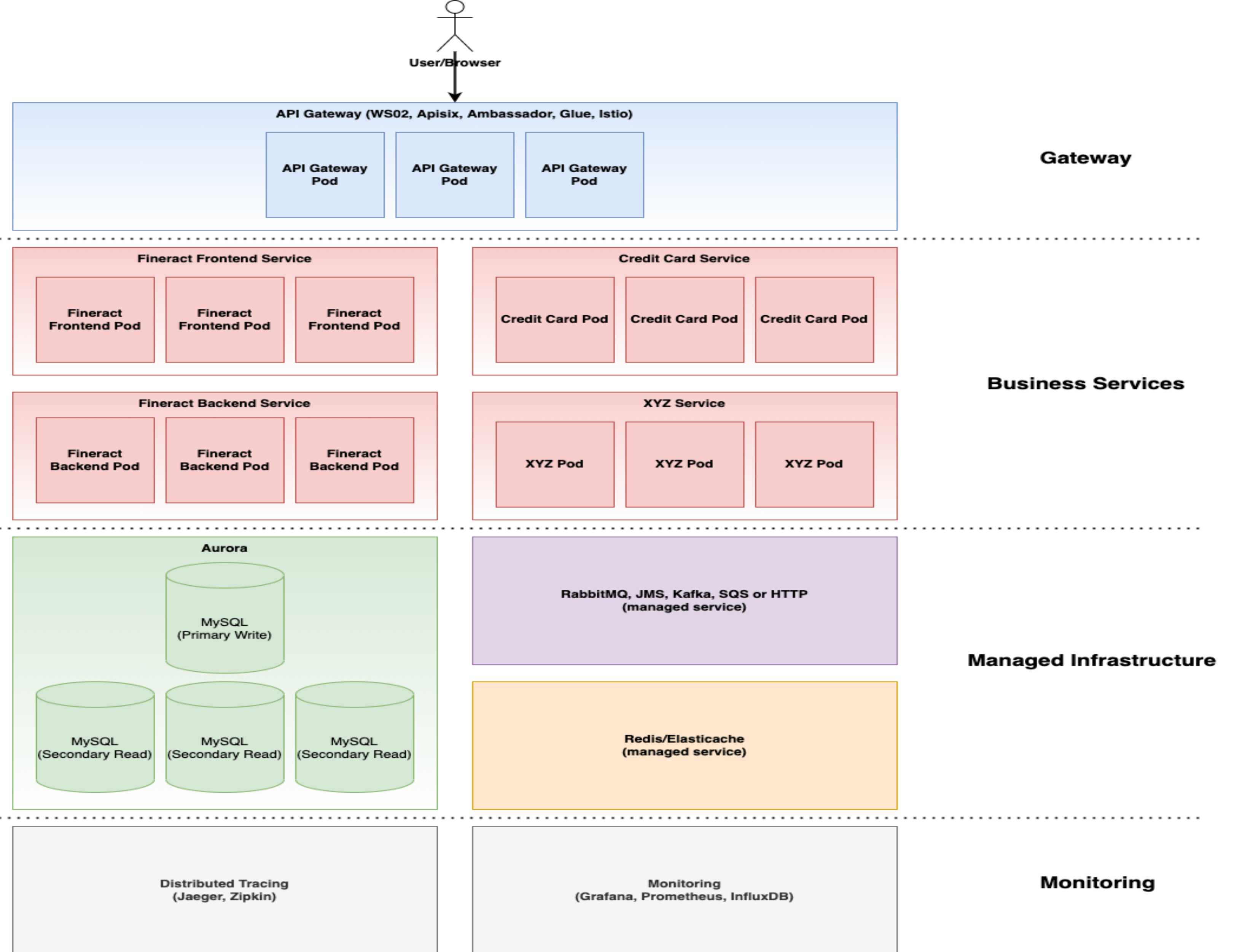
Fineract Enterprise Ready

- Broken down Fineract into modular 'Macroservice'
- Introduced Async Command Filter to split Write & Read
- Introduced Apache Camel as Command Processor as ESB
- Message Queue Mechanism
- Parallel executions (Multithreading)
- Cluster deployment (Kubernetes)
- ElasticSearch Logging & Kibana - ELK
- Microservices for integrations



Use Case

Fineract
Enterprise
Ready



Improvements

Rigorous Refactoring

- Transactions Processing
- Jobs

Garbage collection improvement (HikariCP)

Azul JDK

Cluster Deployments

ELK

Async Transaction processing

Load Testing

Pen Testing

Parallel Transaction Processing

WSO2

Custom Decisioning Intelligence

Business Intelligence

Debezium / Kafka

Based on 500-10,000 Concurrent users over running over a period of at least 5mins onwards.

MVP	TPS	MACHINE SPECS	Status
1	6-15	16GB RAM, 4XCores vCPU	Prod
2	55-100	32GB RAM, 8 Cores vCPU	Prod
3	300-700	32GB RAM,8 Cores vCPU	Beta
4	1000-10,000	64GB RAM,8+ Cores	In Dev



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“If you can’t measure it then how do you know the growth?” _ Javier, CEO, FITER.

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THANK YOU