
WebStore System Architecture and Design

Tsadikan Yitbarek, Aug 2021

5 Microservices

Customer Service

Handles customer CRUD
and send email to customer

Product Service

Handles product CRUD and
product stock recalculation

Order Service

Handles Creating and
Placing order

...continued

ShoppingCommandService

Handles storing shopping cart and cart checkout events

ShoppingQueryService

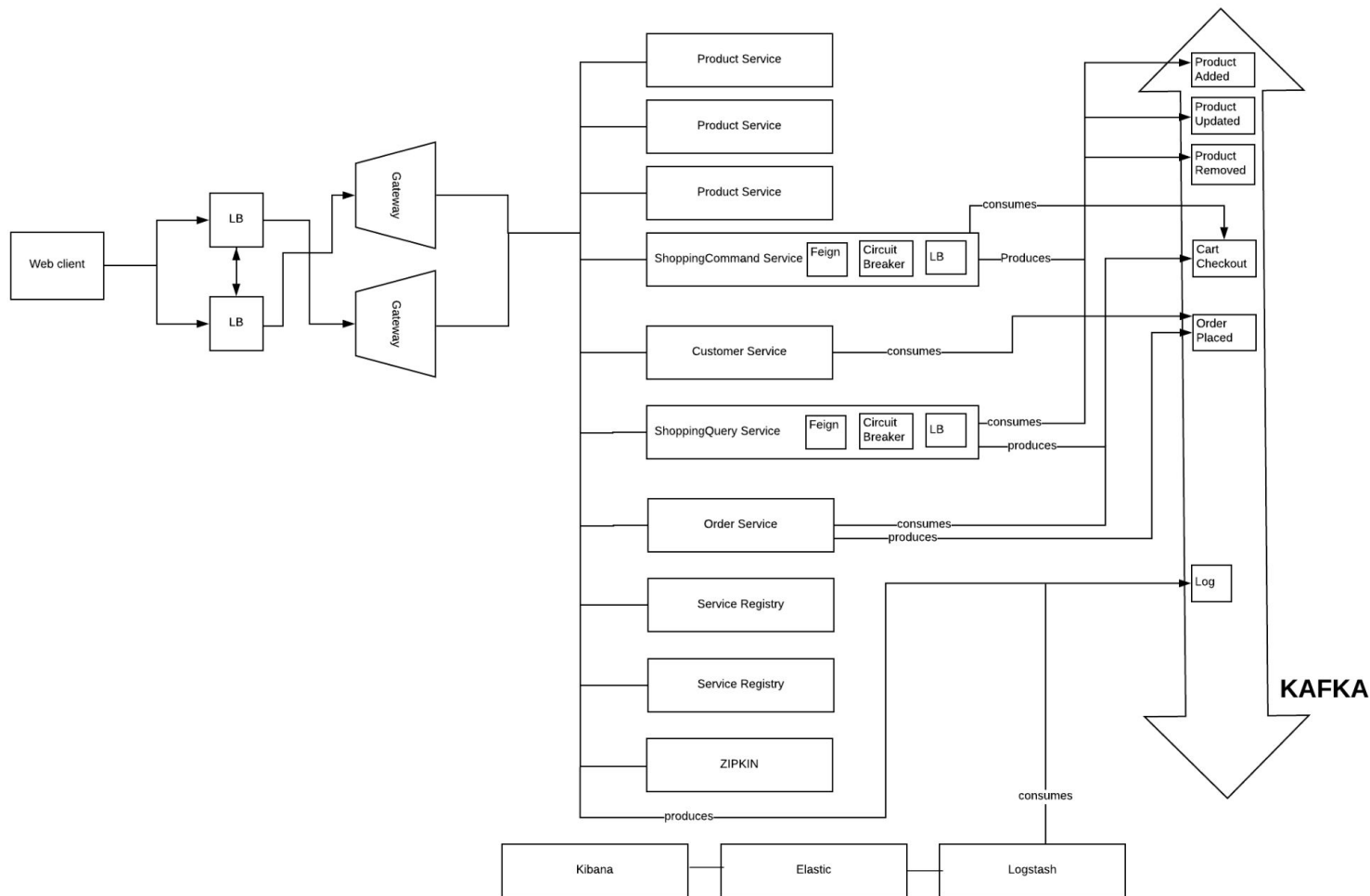
Acts as a query service to fetch shopping carts and handles cart checkout



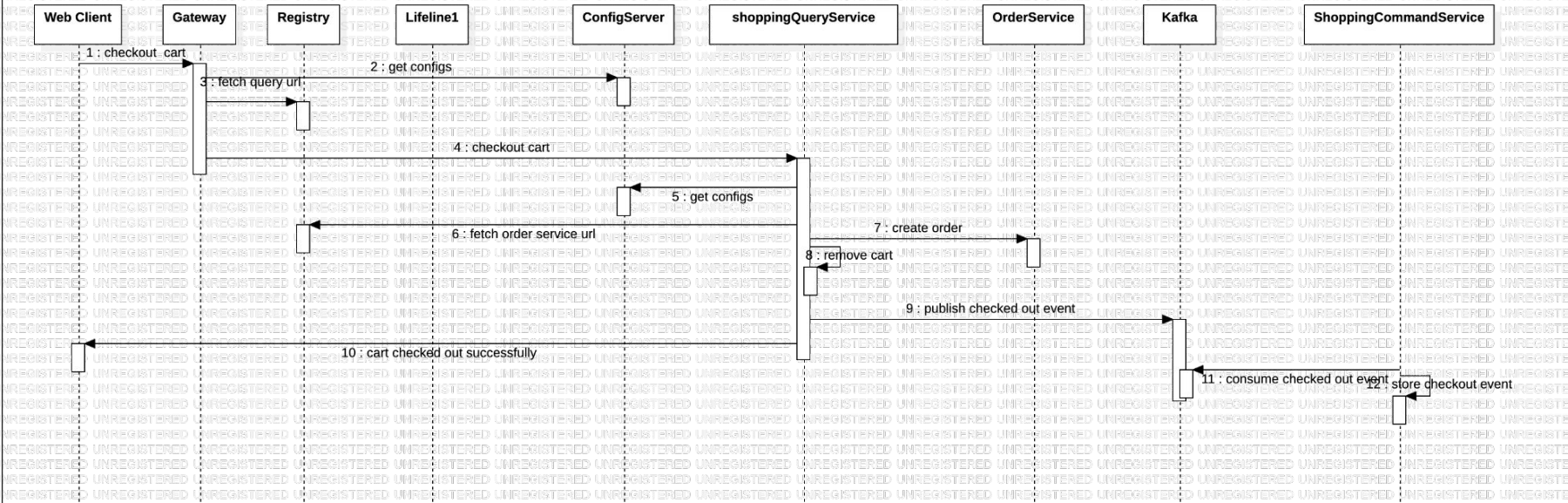
1. Main Points

Architecture wise, the following supporting services are used to have a scalable and reliable system

- Gateway with Load balancer
- Openfeign with Circuit breaker
- Event sourcing and CQRS
- Config Server
- Zipkin
- ELK with Kafka



sd Checkout Shopping cart Sequence Diagram



sd Order Place Sequence Diagram

Web Client

Gateway

Registry

Lifeline1

ConfigServer

OrderService

Kafka

ProductService

CustomerService

1: place order

3: fetch order service url

2: get configs

4: place order

5: publish order placed event

7: consume order placed event

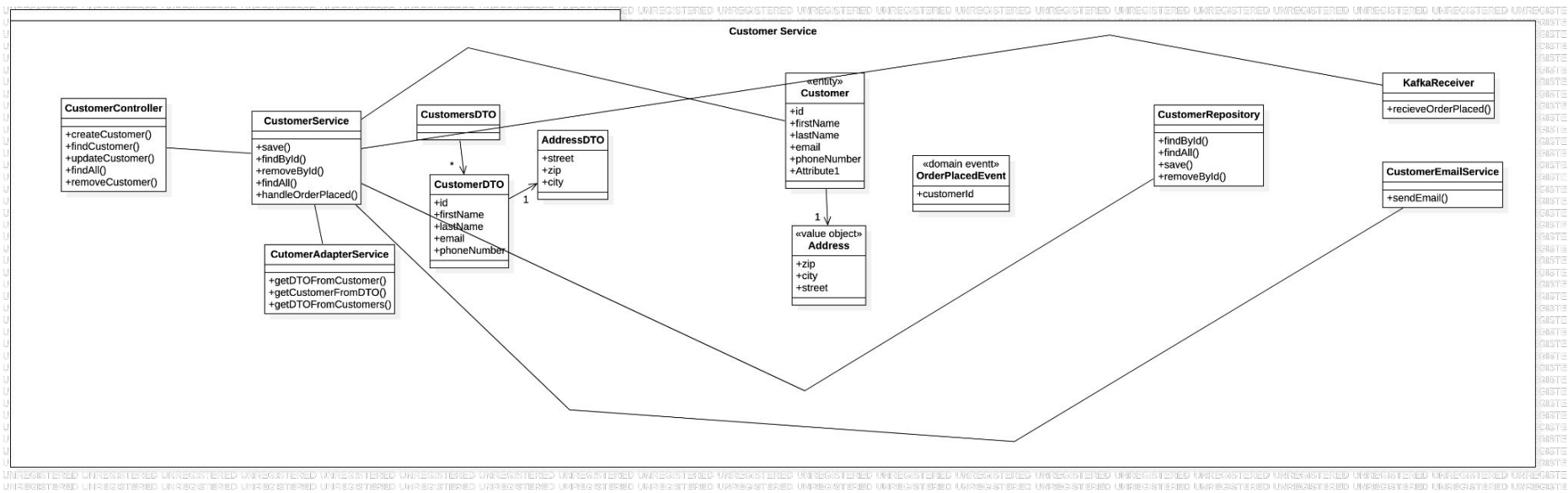
8: update stock amount

9: consume order placed event

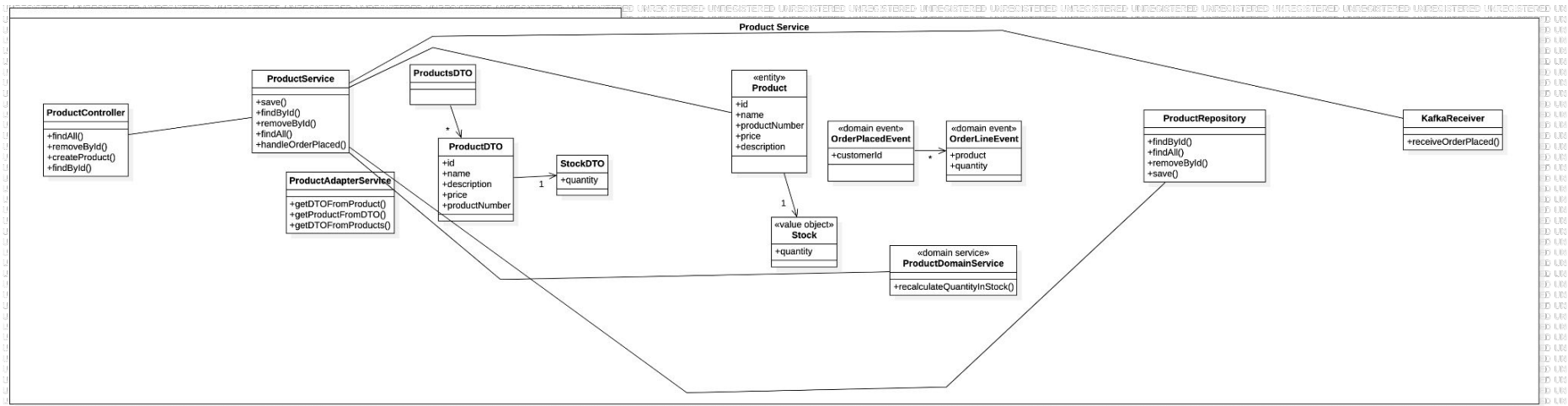
10: send email to customer

6: order placed successfully

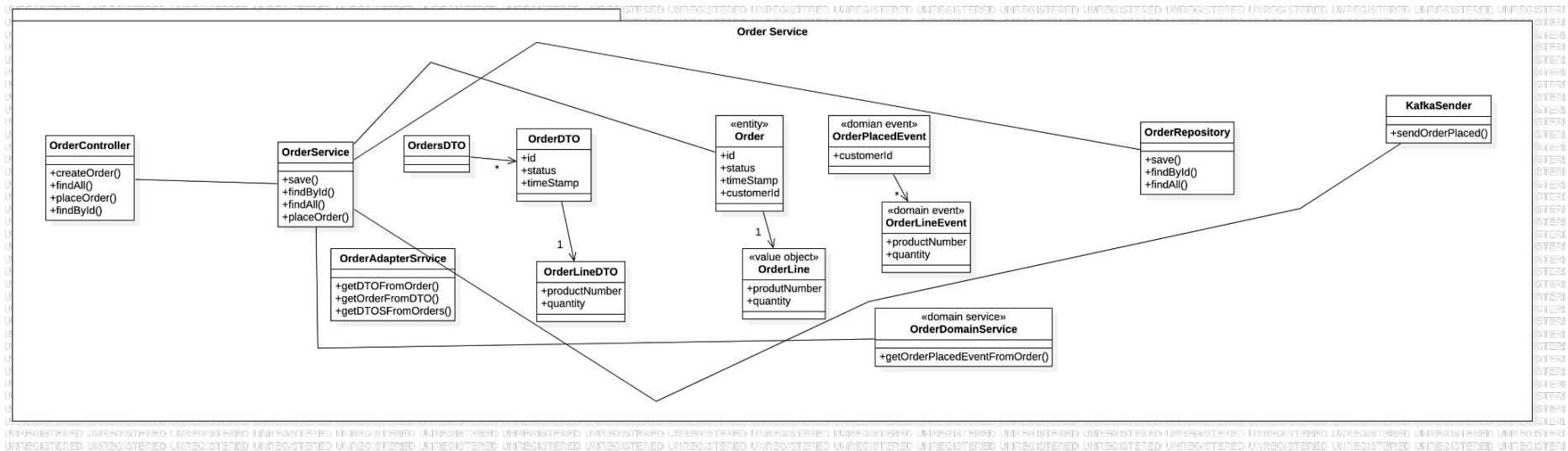
Customer Service



Product Service

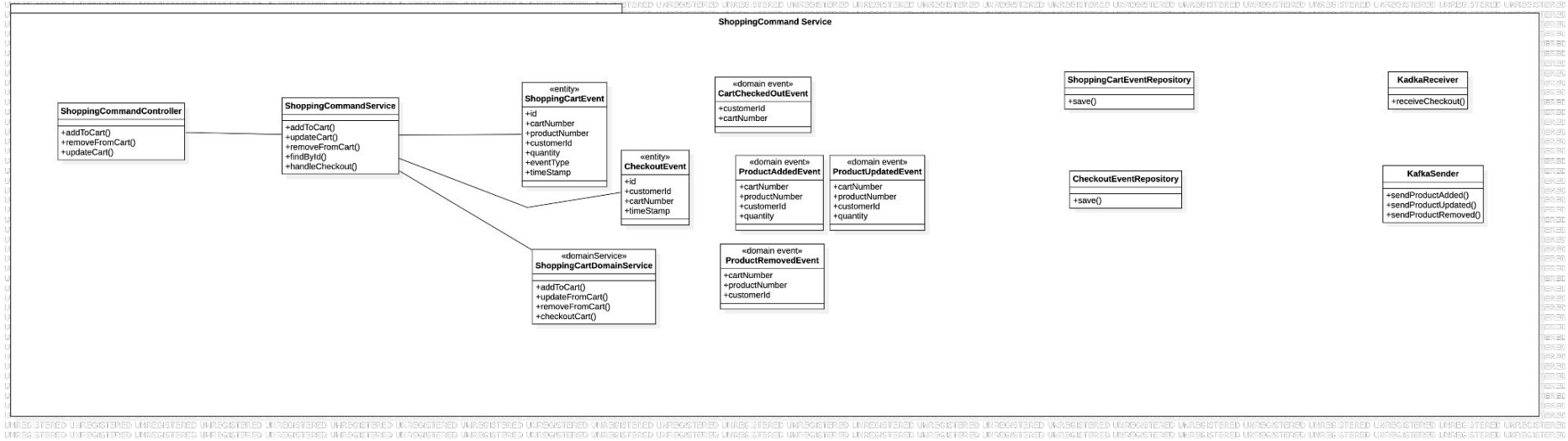
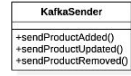
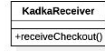
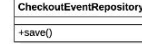
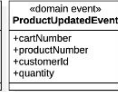
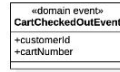
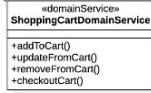
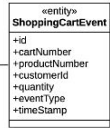
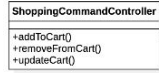


Order Service

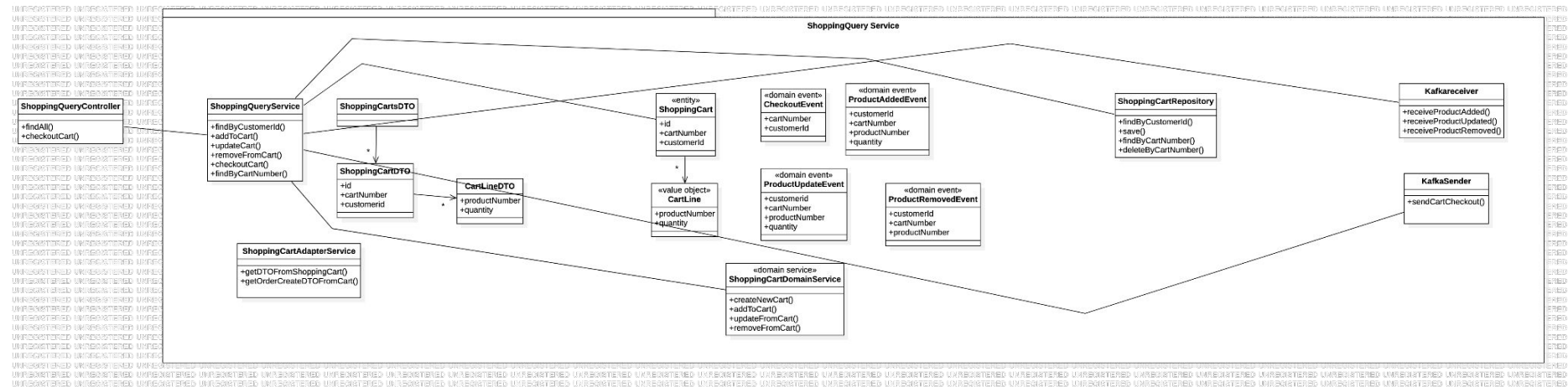


ShoppingCommand Service

ShoppingCommand Service



ShoppingQuery Service





Thank you

Implementation of the design can be found in
github. heathbrothers.com/presentations