Microfrontends
The Next Step after Microservices

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SCHWARZ

Lidl

Kaufland
Over 2,500 employees are working ...
... in 5 locations
... and 6 warehouses

- Rotterdam
- Roosendaal (2019)
- Venlo
- Hückelhoven
- Pilsen
- Großbeeren
- Ludwigsfelde
30,000 products ...
...
8,000,000 customers
... 750 Mio. Euro revenue
A long time ago in a galaxy far, far away ...
Going international!

5 countries, 
20 teams, 
More to follow...
... so what is MindShift?
Let’s start with a monolith!
Split up in Layers

- Frontend
- Backend
- Database
The Shop Team

Frontend Team

Backend / DevOps Team
Micro-Services...

Frontend

Aggregation Layer

- Product Service
- Search Service
- Rating Service
- Basket Service
- Payment Service
Oh No! The Frontend!

Frontend

Aggregation Layer
- Product Service
- Search Service
- Rating Service
- Basket Service
- Payment Service
Back to the Monolith.

Domains

Frontend

Backend

Database
Split up in domains
One vertical domain,
Still all the layers, all the components
One vertical domain,
Still all the layers, all the components
Clear teams, clear missions

Team Product

**Mission:**
Present the Product

Team Search

**Mission:**
Quickly find the right product

Team Checkout

**Mission:**
Provide a good checkout experience
Flexible deployments
Deployments - Decreasing time to release!
But how do we get an online shop?
Our Journey to (the) MindShift
Incremental integration
Into the existing online shop
10 young, motivated Teams!
Team Responsibilities
Shop Systems Overview
All about the compromise
The Checkout communication
The Ideal: MQ
Product Aggregator
Quick and dirty: Shared DB Content Management
Migrating existing data
Red Hat OpenShift: Plattform-As-A-Service
Server Side Frontend Composition
With Edge Side Includes (ESI)
Other Options

• AJAX as replacement for ESI includes on the browser

• DOM Manipulation + shared state on the browser with cookies or localStorage
  • Good option for content which is not SEO-relevant

• Share Web Components as NPM Packages
  • 😞 might lead to coupling on the server side if asynchronous calls are required
  • 😊 It can be a great solution if the data required to render those components is distributed asynchronous, for example, through a message broker
With great new technologies comes great new responsibility.
Some lessons we learned...
Live Demo

Image Source: https://giphy.com/gifs/ign-describe-plans-13HBDT4QSTpveU
Additional Ressources

• https://scs-architecture.org/
• https://roca-style.org/
• https://12factor.net

• https://micro-frontends.org/
  • https://www.youtube.com/watch?v=dTW7eJsIHDg
Thank you for your attention!
Time for Questions

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