



**adaptTo()**

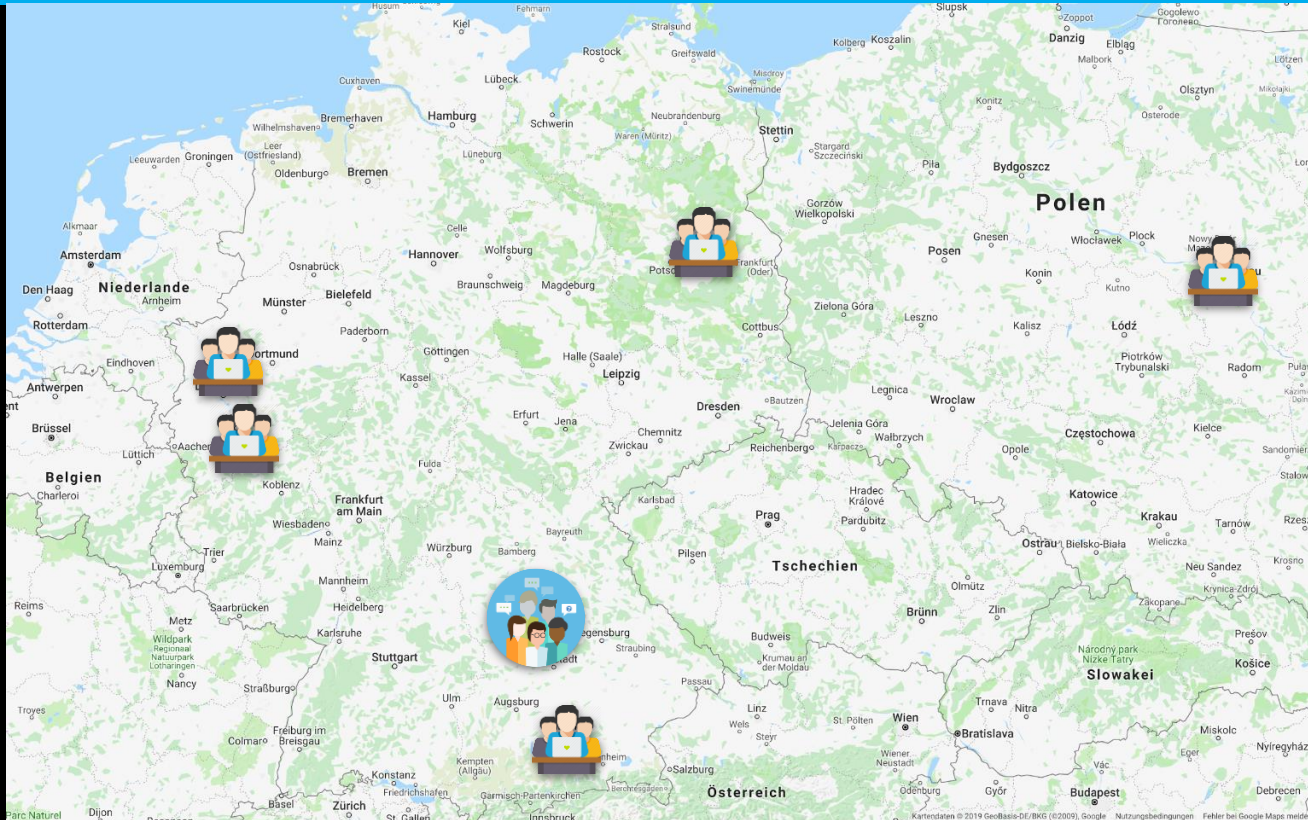
APACHE SLING & FRIENDS TECH MEETUP  
2 - 4 SEPTEMBER 2019

Using React to enable Web Developers to work with AEM  
T. Schumacher, TECLEAD

- Project Situation
- Challenge
- Solution
  - Boilerplate
  - AEM Generator
  - Decoupled React Components
  - Custom Dialogs
- What we learned / Future

## Project Situation - Distributed Teams in an enterprise context

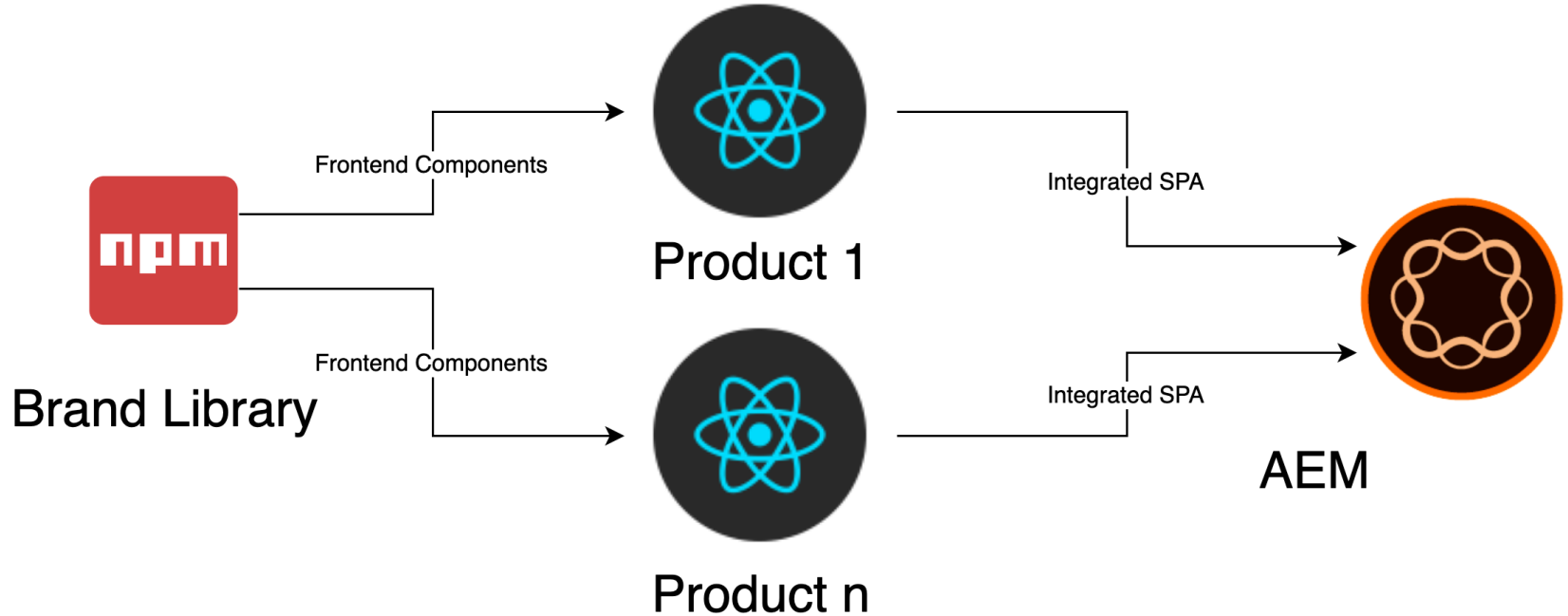
# Distributed Teams in an enterprise context



# Distributed Teams in an enterprise context

- language barrier
- different know how
- only high level architecture provided
- multiple locations and teams
- Different brands, same components
- external frontend library based on React

# Distributed Teams in an enterprise context



# What is the challenge

# What is the challenge

- no AEM knowhow in internal teams
- redundant frontend code
- tight deadlines → no time / resources for coaching
- internal acceptance for AEM as the main technology



# Solution

- AEM Generator
- Decoupled REACT Components
- SEO by SSR
- Custom Dialogs (with React)
- Boilerplate - Project structure and tooling

- frontend
  - react-components (with corporate library)
  - Typescript (tracking lib)
  - stylesheets
  - storybook
- Java
- e2e (automated cross browser tests with Selenium)
- test-content
- gradle

Filter

- › Akkordeon
- › ArticleHeader
- › ArticleTeaser
- › BenefitsCard
- › Blockquote
- › CheckoutFooter
- › CommunicationModule
- › CommunicationTeaser
- › CookieBar
- ✓ HeaderMainPage
  - Basic example
  - Configure background-color
  - Eye-catcher
  - With one test seal
  - With two test seals**
  - With markup as teaser text
- › Headline
- › Image Editor
- › Image Loader
- › Link
- › NavigationCard
- › NavigationCardContainer
- › ProductTeaser
- › ProductCard
- › ProductHeader
- › ProductLink
- › ProductPromo
- › ProductTable
- › ServiceInfoPanel
- › TrustBand
- › TrustModule
- › UseCase
- › OptoutButton

## HeaderMainPage With two test seals



In this example two test seals is displayed. Unfortunately, we cannot make the array of seals configurable.

## Story Source

```
<HeaderMainPage
  teaserImage="/teaser.png"
  eyeCatcher={{imageUrl: '/eyecatcher.svg', altText: 'altText'}}
  testSeals={['/Stiftungwt.png', '/Money.jpg']}
  headlinePrimary="Produkt-Header Dachzeile h1"
```

Copy

# Boilerplate – React Components



„Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.“

---

Elon Musk **Founder & CEO**

- React Component properties  $\approx$  Dialog properties

```
export interface BlockquoteProps extends GeneralAemReactComponentProps {  
  imageUrl?: string;  
  author?: string;  
  authorJob?: string;  
  text: string;  
  backgroundColor?: string;  
}
```

- Usage of the corporate library

```
<Provider theme={theme}>
  <BlockquoteEE
    img={new ImageLoader({ imageUrl }).desktopUrl}
    author={
      <>
        {author} <strong>{authorJob}</strong>
      </>
    }
  >
  {text}
</BlockquoteEE>
</Provider>
```

# AEM Generator - and what it does



- NPM / Typescript
- Is used in the build process only
- Generates all needed AEM sources
- Open source + extending in client context

**@teclead/aem-generator**

1.0.9 • Public • Published 2 days ago

Readme
Admin
1 Dependencies
0 Dependents
10 Versions

---

## AEM Dialog Generator

This project contains the Custom Dialog Generator for AEM. The Library provides the creating of all necessary AEM Files (XML, HTML) to create an AEM component based on a TypeScript file, which describes the structure of the dialog and the component

### Development

The library can be run by executing builder.js. It is recommended to implement a script in the package.json, that looks like this

```
"build:dialogues": "node node_modules/@teclead/aem-generator/builder.js",
```

Building the dialogues can then be executed by running `npm run build:dialogues`

### API

install

```
> npm i @teclead/aem-generator
```

± weekly downloads

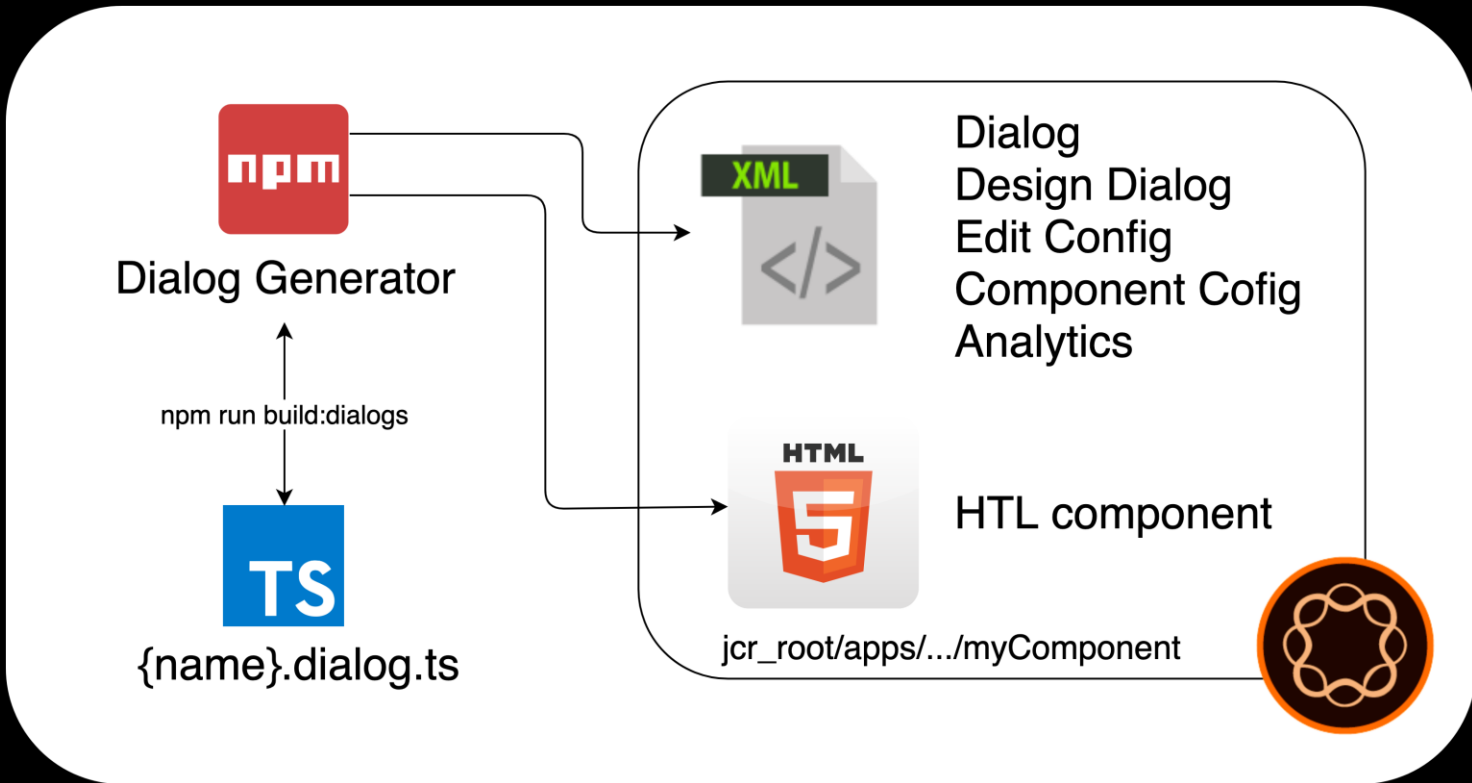
155

version	license
1.0.9	ISC
open issues	pull requests
0	0
homepage	repository
github.com	🔗 github
last publish	
2 days ago	

Simple demo project: <https://github.com/Teclead/AdaptTo2019>

Get it @NPM <https://www.npmjs.com/package/@teclead/aem-generator>

# AEM Generator



### Zitat

ZITAT INHALTE

Autor i

Elon Musk


Job des Autors i

Founder & CEO

Text i

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.

Bild i



Edit Clear Image Editor

Drop an asset here.

# AEM Generator

- Is used in the build process only
- Generates all needed AEM sources

```
const dialog: AEMTouchUIDialog = {
  componentPath: COMPONENTPATH + 'blockquoteReact',
  componentName: 'Quote',
  componentGroup: COMPONENT_GROUP,
  componentDescription: 'A React Component for a quote',
  buildConfigForAem: true,
  reactAppName: 'BlockquoteComponent',
  tabs: [{ title: 'Quote Component', fields: dialogFields }]
};
```

- Dialog fields  $\approx$  React Props
- TS helps for validation in the IDE

```
const dialogFields: TouchUIDialogField[] = [  
  {  
    label: 'Name',  
    type: TouchUIField.Text,  
    key: 'author',  
    isRequired: true,  
    description: 'Name of the author'  
  },  
  {  
    label: 'Author Image',  
    type: TouchUIField.Imagefield,  
    key: 'imageUrl',  
  }  
];
```

- Field types with IDE support, Based on TS enum

```
{  
  label: 'Author Image',  
  type: TouchUIField.  
}
```

You, a few seconds ago • Uncommitted changes

- Button (enum member) TouchUIField.Button = "button" ⓘ
- Checkbox
- Dropwdown
- Imagefield
- Multifield
- Number
- Path
- RichText
- Tag
- Text
- TextArea

## ▾ blockquoteReact

### ▾ \_cq\_design\_dialog

📡 .content.xml

### ▾ \_cq\_dialog

📡 .content.xml

📡 \_cq\_editConfig.xml

📡 .content.xml

<> blockquoteReact.html

JS ssrbundle.js

- Generates all:
  - Folders and xml files
  - Dialogs (with functions)
  - Analytics
  - HTL template
  - SSR (project specific)
- Easy to migrate components (e.g. Classic UI to Touch UI)



- FAQ:
  - Can we use component inheritance?
  - What about custom dialogs?
  - Is it mandatory for every component?
  - What types are supported?  
(e.g. nested multifields)

# Decoupled REACT Components



# Decoupled REACT Components

- HTL template:
  - Same for each AEM React component
  - No data fetch needed
  - Uses SSR
- Separate JS build vs clientlibs
- Can be used in outside of AEM
- Can be mixed with plain HTL components

# Decoupled REACT Components

```
<head>
  <link href="navi.css">
  <link href="app-1.css">
  <link href="app-2.css">
  <link href="footer.css">
  <script src="/polyfill.js"></script>
</head>

<body>
  <navi-react />
  <react-app-1 />
  <react-app-n />
  <footer-react />
  <script src="navi.js"></script>
  <script src="app-1.js"></script>
  <script src="app-2.js"></script>
  <script src="footer.js"></script>
</body>
```

# Decoupled REACT Components

```
<head>  
  <link href="navi.css">  
  <link href="app-1.css">  
  <link href="app-2.css">  
  <link href="footer.css">  
  <script src="/polyfill.js"></script>  
</head>
```

```
<body>  
  <navi-react />  
  <react-app-1 />  
  <react-app-n />  
  <footer-react />  
  <script src="navi.js"></script>  
  <script src="app-1.js"></script>  
  <script src="app-2.js"></script>  
  <script src="footer.js"></script>  
</body>
```

SSR Component scans for  
used apps(Server)



# Decoupled REACT Components

```
<head>
  <link href="navi.css">
  <link href="app-1.css">
  <link href="app-2.css">
  <link href="footer.css">
  <script src="/polyfill.js"></script>
</head>
```

```
<body>
  <navi-react />
  <react-app-1 />
  <react-app-n />
  <footer-react />
  <script src="navi.js"></script>
  <script src="app-1.js"></script>
  <script src="app-2.js"></script>
  <script src="footer.js"></script>
</body>
```

SSR Component scans for  
used apps(Server)

injects data and gets markup

What happens on the client?

# Decoupled REACT Components

```
<sly data-sly-use.ssr="com.ServerSideRenderingComponent">
  <div class="aem-react-component BlockquoteComponent"
    data-params="{ssr.allProperties}">
    ${ssr.renderedHtml @ context = 'unsafe'}
  </div>
</sly>
```



# Decoupled REACT Components

- React loader looks for indicator (Client)

```
<sly data-sly-use.ssr="com.ServerSideRenderingComponent">  
  <div class="aem-react-component" BlockquoteComponent"  
    data-params="{ssr.allProperties}">  
    {ssr.renderedHtml @ context = 'unsafe'}  
  </div>  
</sly>
```

# Decoupled REACT Components

- React loader looks for indicator
- Finds the right React App to render

```
<sly data-sly-use.ssr="com.ServerSideRenderingComponent">  
  <div class="aem-react-component BlockquoteComponent"  
    data-params="{ssr.allProperties}">  
    ${ssr.renderedHtml @ context = 'unsafe'}  
  </div>  
</sly>
```

# Decoupled REACT Components

- React loader looks for indicator
- Finds the right React App to render
- Injected data from JCR

```
<sly data-sly-use:ssr="com.ServerSideRenderingComponent">  
  <div class="aem-react-component BlockquoteComponent"  
    data-params="{ssr.allProperties}">  
    ${ssr.renderedHtml @ context = 'unsafe'}  
  </div>  
</sly>
```

# Decoupled REACT Components

Zitat

ZITAT INHALTE

Autor ?

Elon Musk


Job des Autors ?

Founder & CEO

Text ?

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.

Bild ?



Edit Clear Image Editor

Drop an asset here.

```

{
  author: "Elon Musk",
  imageUrl: [{...}],
  text: "Lorem Ipsum...",
  sling:resourceType: "apps/...//blockquoteReact",
  authorJob: "Founder & CEO",
  resourcePath: "/content/.../jcr:content/root/blockquotereact",
  isEditMode: true,
  serviceTime: '08:00-19:00',
  phoneNumber: '0123',
  systemStyle: {
    paddingType: "large",
    padding: "top",
    position: "center",
    backgroundColor: "white"
  }
}

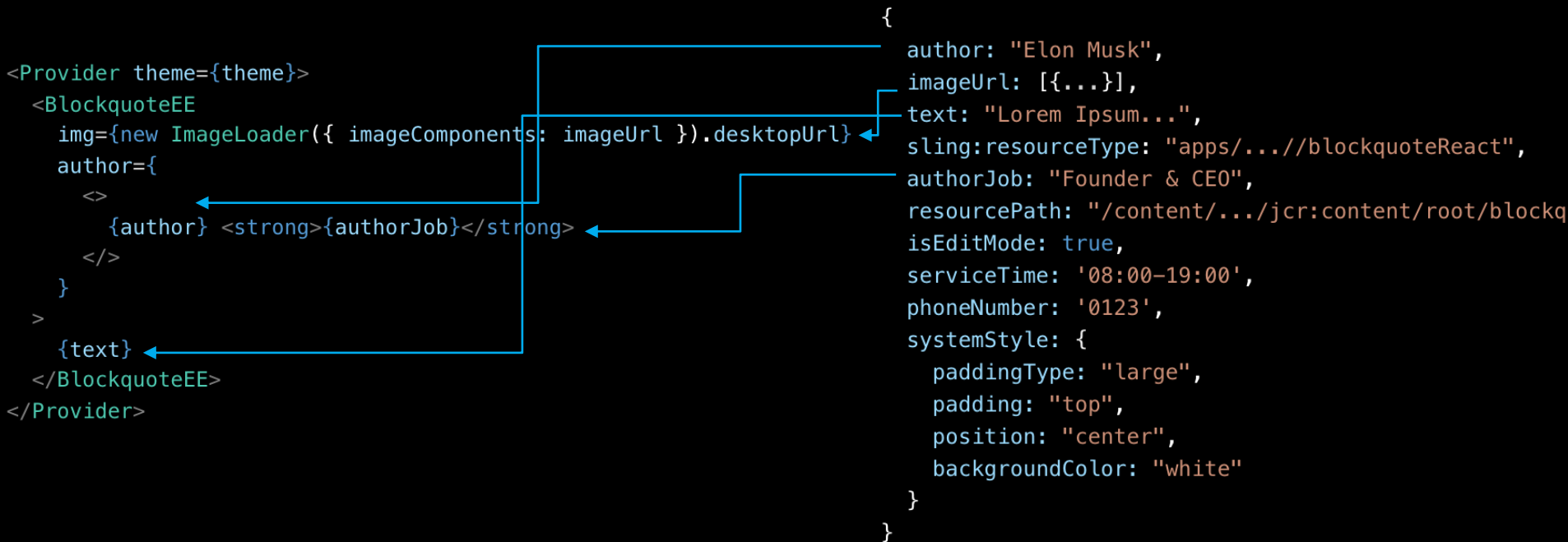
```

# Decoupled REACT Components

```
<Provider theme={theme}>
  <BlockquoteEE
    img={new ImageLoader({ imageUrl }).desktopUrl}
    author={
      <>
        {author} <strong>{authorJob}</strong>
      </>
    }
  >
    {text}
  </BlockquoteEE>
</Provider>
```

```
{
  author: "Elon Musk",
  imageUrl: [{...}],
  text: "Lorem Ipsum...",
  sling:resourceType: "apps/.../blockquoteReact",
  authorJob: "Founder & CEO",
  resourcePath: "/content/.../jcr:content/root/blockq",
  isEditMode: true,
  serviceTime: '08:00-19:00',
  phoneNumber: '0123',
  systemStyle: {
    paddingType: "large",
    padding: "top",
    position: "center",
    backgroundColor: "white"
  }
}
```

# Decoupled REACT Components



# Decoupled REACT Components



„Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.“

---

Elon Musk **Founder & CEO**

# Custom Dialogs



# Custom Dialogs

- Needed for complex authoring use cases
- Better UX for authors
- Examples:
  - large icon sets
  - complex tables
  - more complex image component



## Allgemein

### Paket - Basis

### Paket - Komfort

### Paket - Super

Aufnahme ohne Gesundheitsfragen



Regelversorgung bei Zahnersatz



**100%**  
Erstattung

**100%**

**100%**  
Erstattung

Privatzahnärztliche Versorgung bei Zahnersatz



**75%**  
Erstattung

**90%**

**75%**  
Erstattung

Implantate



**75%**  
Erstattung

**90%**

**75%**  
Erstattung

Weitere Leistungen



**75%**  
Erstattung

**90%**

**75%**  
Erstattung

## Allgemein

Aufbauzeit und Leistungseinschränkungen



Bei einem Unfall besteht sofort Anspruch auf die Tarifleistungen in voller Höhe. Ansonsten gelten nur während der ersten 4 Versicherungsjahre je Tarif und versicherter Person folgende Leistungsbegrenzungen:

Im ersten Versicherungsjahr höchstens 250 € In den ersten beiden Versicherungsjahren zusammen höchstens 500 € In den ersten 3 Versicherungsjahren zusammen höchstens 750 € In den ersten 4 Versicherungsjahren zusammen höchstens 1.000 €

Mit Ablauf des vierten Versicherungsjahres bestehen die summenmäßigen Begrenzungen der Tarifleistungen nicht mehr.





Nur für gesetzlich Versicherte








Vorschau








Tabelle speichern

## Tabelle editieren:

 Sticky Header

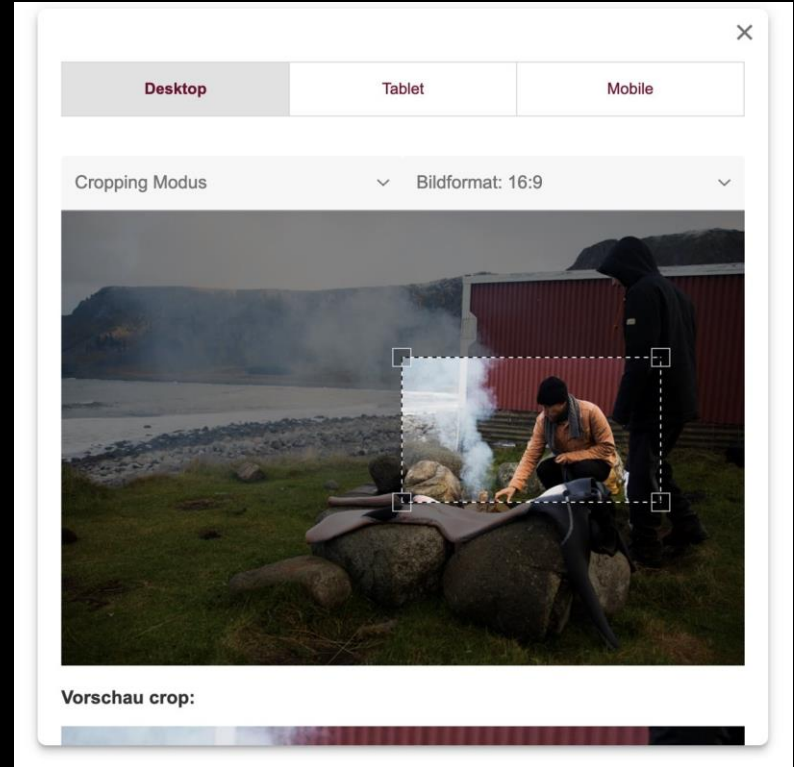
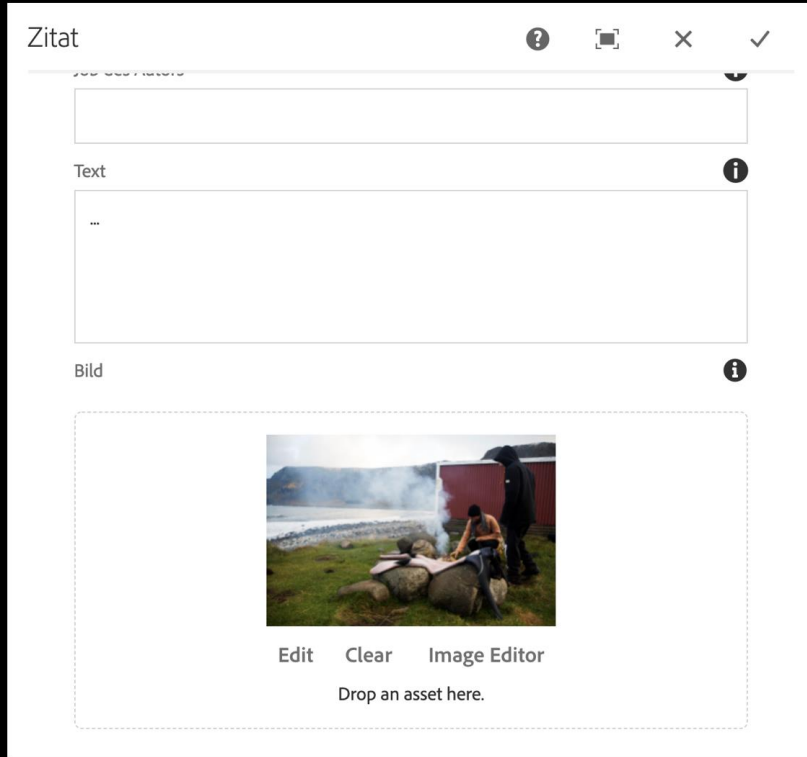
> 	< > 	< > 	< 
Text ▾ Zentriert ▾ 1 ▾	Icon-Überschrift ▾ Zentriert ▾ 1 ▾	Icon-Überschrift ▾ Zentriert ▾ 1 ▾	Icon-Überschrift ▾ Zentriert ▾ 1 ▾
Tooltip Text	Tooltip Text	Tooltip Text	Tooltip Text
Überschrift	DentalImplantIcon	DentalImplantIcon	DentalImplantIcon
Allgemein	Paket - Basis	Paket - Komfort	Paket - Super

> 	< > 	< > 	<  Reihe:   
Text ▾ Zentriert ▾ 1 ▾	Icon-Überschrift ▾ Zentriert ▾ 1 ▾	Icon-Überschrift ▾ Zentriert ▾ 1 ▾	Icon-Überschrift ▾ Zentriert ▾ 1 ▾
<b>Headline Tooltip:</b>  Toller Content	Tooltip Text	Tooltip Text	Tooltip Text
Überschrift	DashboardCheckIcon	DashboardCheckIcon	DashboardCheckIcon
Aufnahme ohne Gesundheitsfragen	Überschrift	Überschrift	Überschrift

> 	< > 	< > 	<  Reihe:   
Text ▾ Zentriert ▾ 1 ▾	Text ▾ Zentriert ▾ 1 ▾	Text ▾ Zentriert ▾ 1 ▾	Text ▾ Zentriert ▾ 1 ▾
<b>Headline Tooltip:</b>  Toller Content	Tooltip Text	Tooltip Text	Tooltip Text
Überschrift	100%	100%	100%
Regelversorgung bei Zahnersatz	Erstattung	Text	Erstattung

> 	< > 	< > 	<  Reihe:   
---	---	--	--

# Custom Dialogs



Kommunikations-Teaser

Kommunikationskarten

Icon

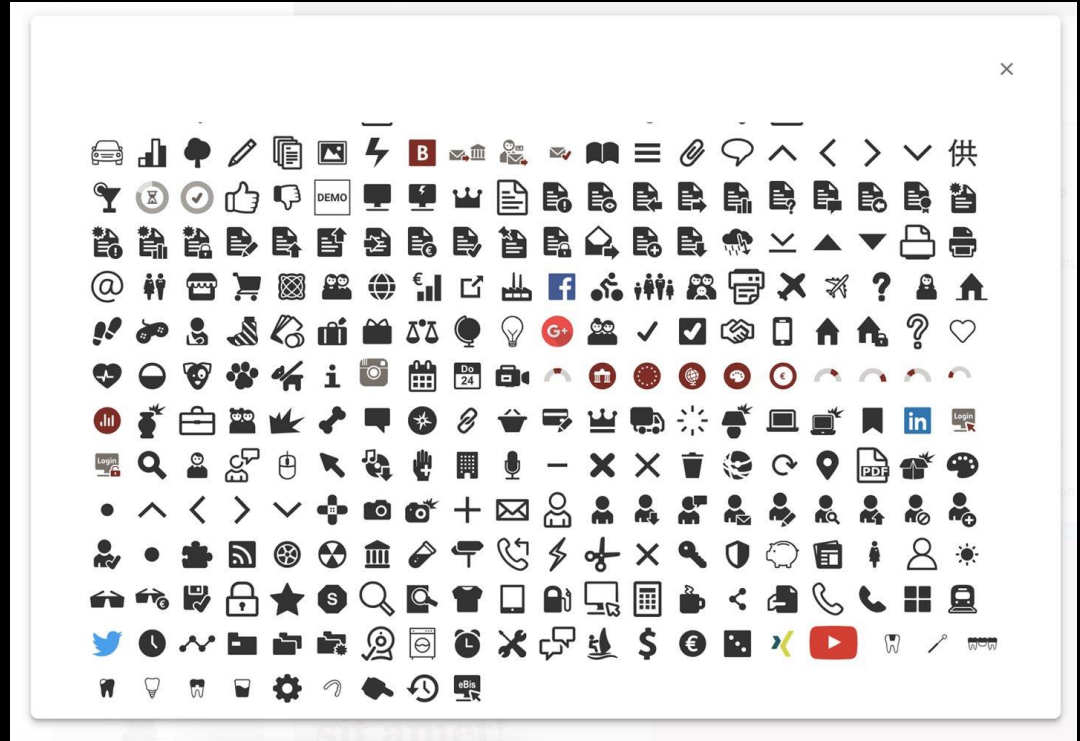
Text

Titel

Link Aktion

Link Pfad

Add



# What we learned

# What we learned

- **Pro:**
  - happy developers => increased productivity
  - faster onboarding of new teams
  - custom dialog > complex parsys structure
  - SEO and React is possible
  - components can be used outside of AEM
- **Cons:**
  - multiple AEM bundles can be a pain
  - check your NPM imports and bundle sizes

- Parsys inside of React Apps
- Nested React apps
- Components as a service  
(deploy new components without any AEM deployment)





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