



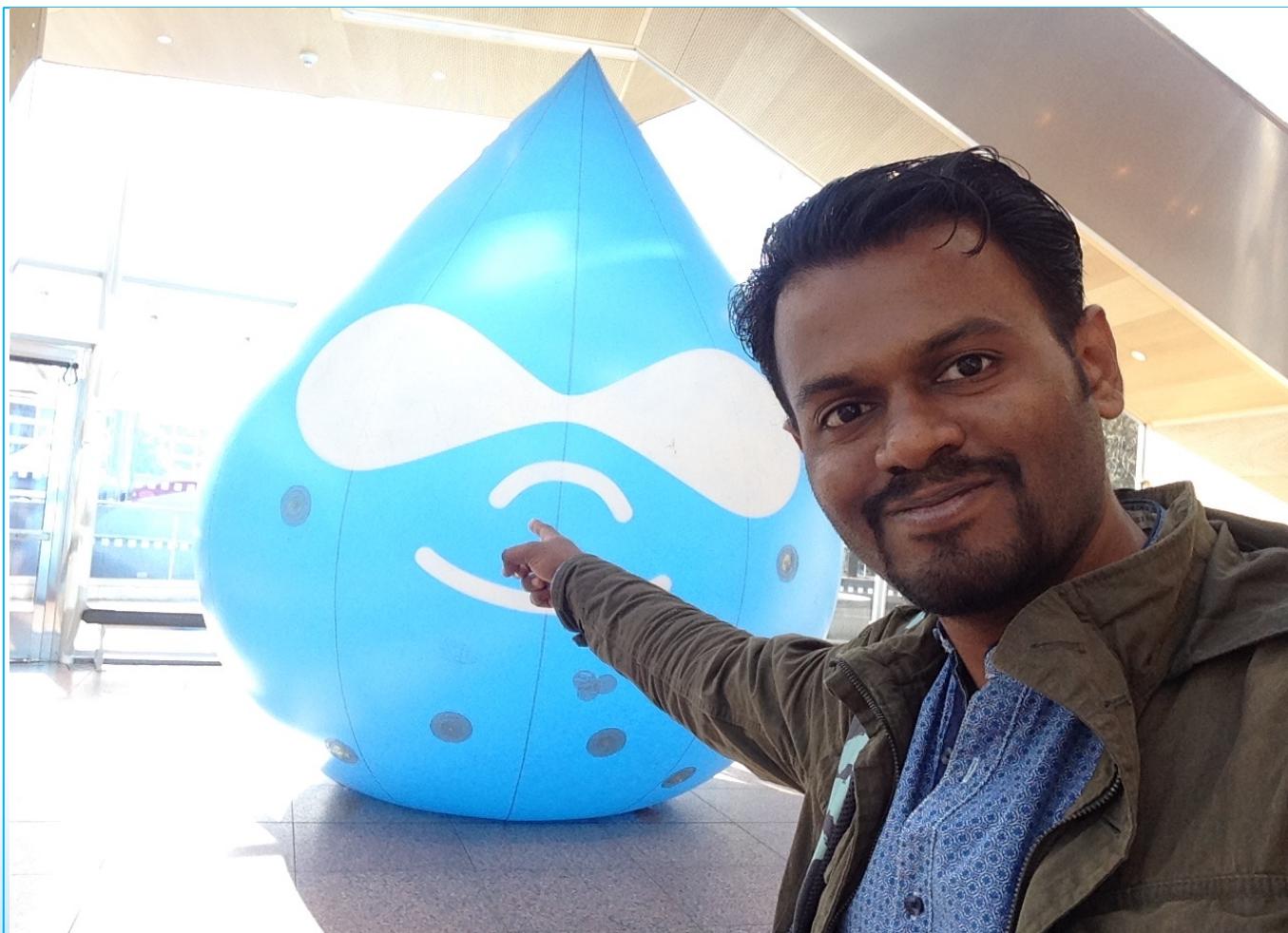
Drupal Camp Mumbai 2018

April 28th & 29th
IIT Bombay



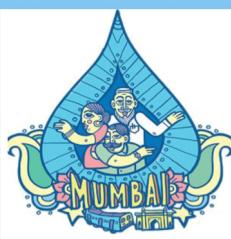


**Drupal 8 and Decoupling Patterns
by
Dinesh Waghmare, TCS**



Myself @DrupalCon Dublin 2017

- ✓ **Dinesh Waghmare**
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- ✓ **Speaker at**
 - ✓ *Drupal Camp Mumbai 2017*
 - ✓ *Drupal Camp Bangalore 2017*
 - ✓ *Drupal Camp Goa 2018*



Session Agenda : Drupal 8 and Decoupling Patterns

- What is Decoupled Drupal?
- What are Decoupled Drupal Architecture Patterns?
- Overview of Traditional Coupling Vs Full Decoupling Vs Progressively Decoupling
- What can be done with Decoupled Drupal Site?
- Deciding Path for Decoupled Drupal
- Risk and Rewards in Decoupled Drupal
- Tools, Frameworks and Process for Decoupled Drupal
- Use Case Demo
 - Centralised Drupal 8 Site JSON API and Viwes: Sessions Information
 - React Web Page to Pull Session Information
 - Alexa Integration with D8 : Session Information





What is Decoupled Drupal?



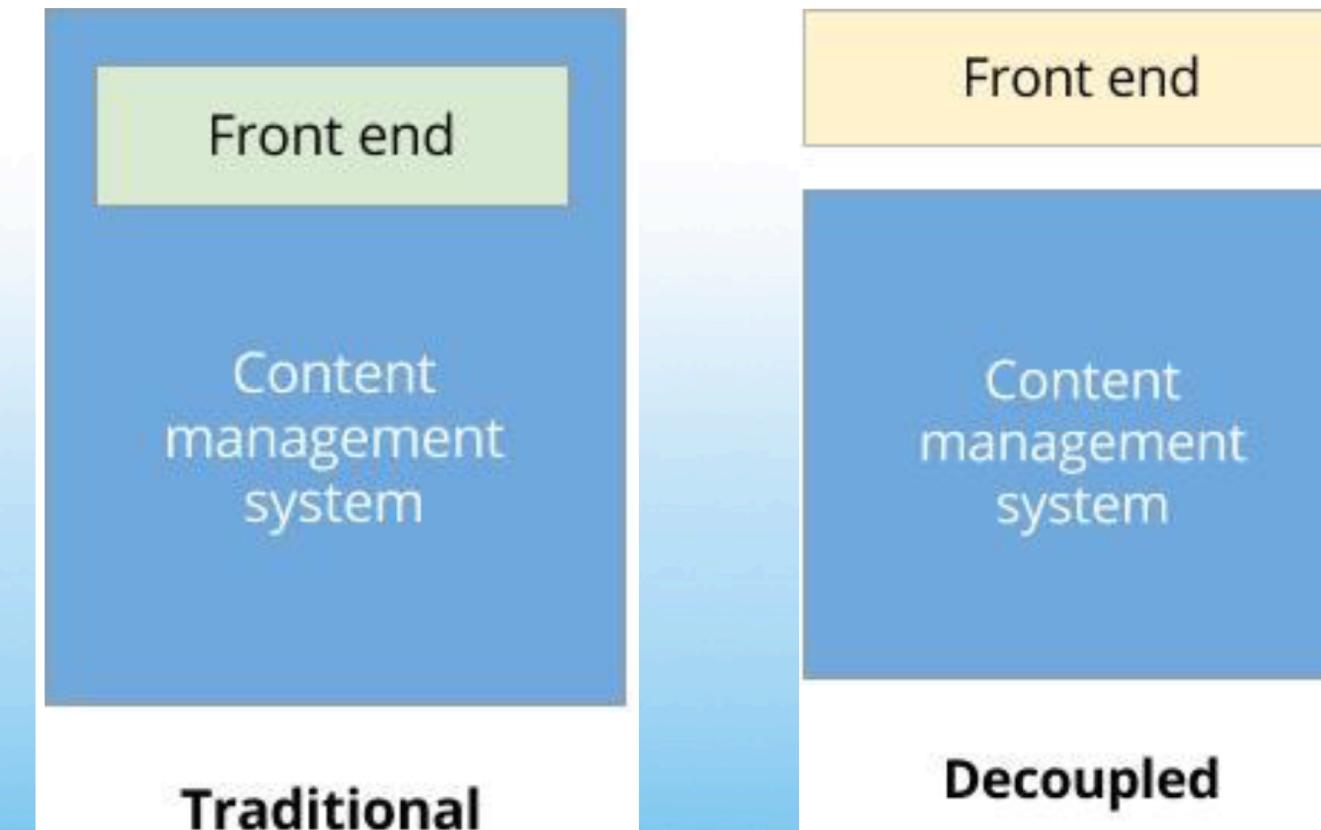
Overview of Decoupled Drupal

- **Decoupled Drupal is concept of splitting content of website from Drupal Theme layer and how it displayed in multiple independent systems**
 - ✓ It's adding layer of technical abstraction between what content provider creates and what content consumer see
 - ✓ **Drupal as CMS** : Web Editors are prime uses accessing Drupal for content workflow
 - ✓ **Content Via Web Service**: Drupal Site is exposed with API's and Web services mainly RESTful manner with friendly formats like JSON API / GraphQL
 - ✓ **Flexibility in Presentation**: Presentation is handled using Static Web Generator, JS frameworks, Native or Hybrid App's, Multiple CMS
 - ✓ Faster Development and Content Creation
 - ✓ Helps in diversity and Innovation, Interactive Experience beyond Website



Decoupled Drupal Architecture Patterns

- **Traditional CMS** : CMS allows web editors to Add / Edit / Publish Content as well as provides control over Presentation logic
- **Decoupled CMS** : allows Web editor to Add / Edit / Publish Content but front end developer will take control over presentation logic

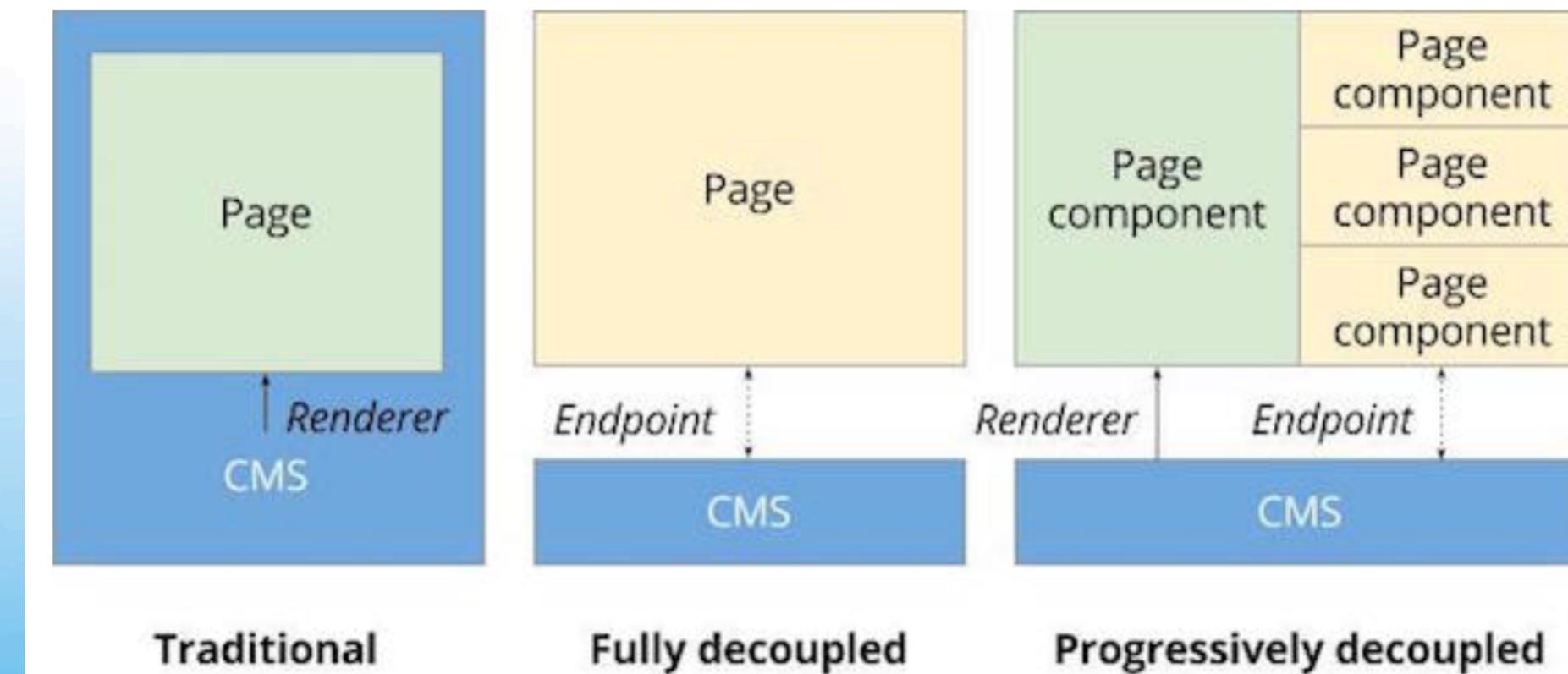


* Ref: <https://dri.es/the-future-of-decoupled-drupal>



Decoupled Drupal Architecture Patterns

- **Fully Decoupled Drupal** : Drupal will allow web Content Editors to Add / Edit / Publish Content while Site Admin will able to serve Content over RESTful API Endpoints, front end developers may use static or JS frameworks to consume API and display content
- **Progressive Decoupled Drupal** : Drupal will play part in presentation by means of renders the page structure or displaying common page elements while JS frameworks will still play role in consuming Drupal or external endpoints to display data

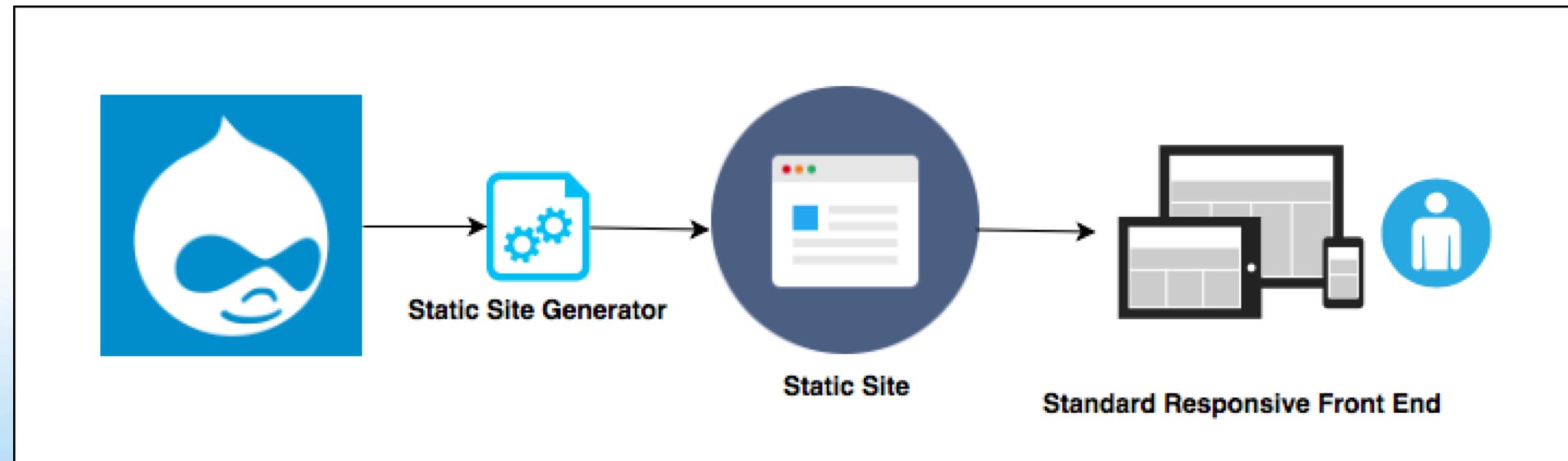


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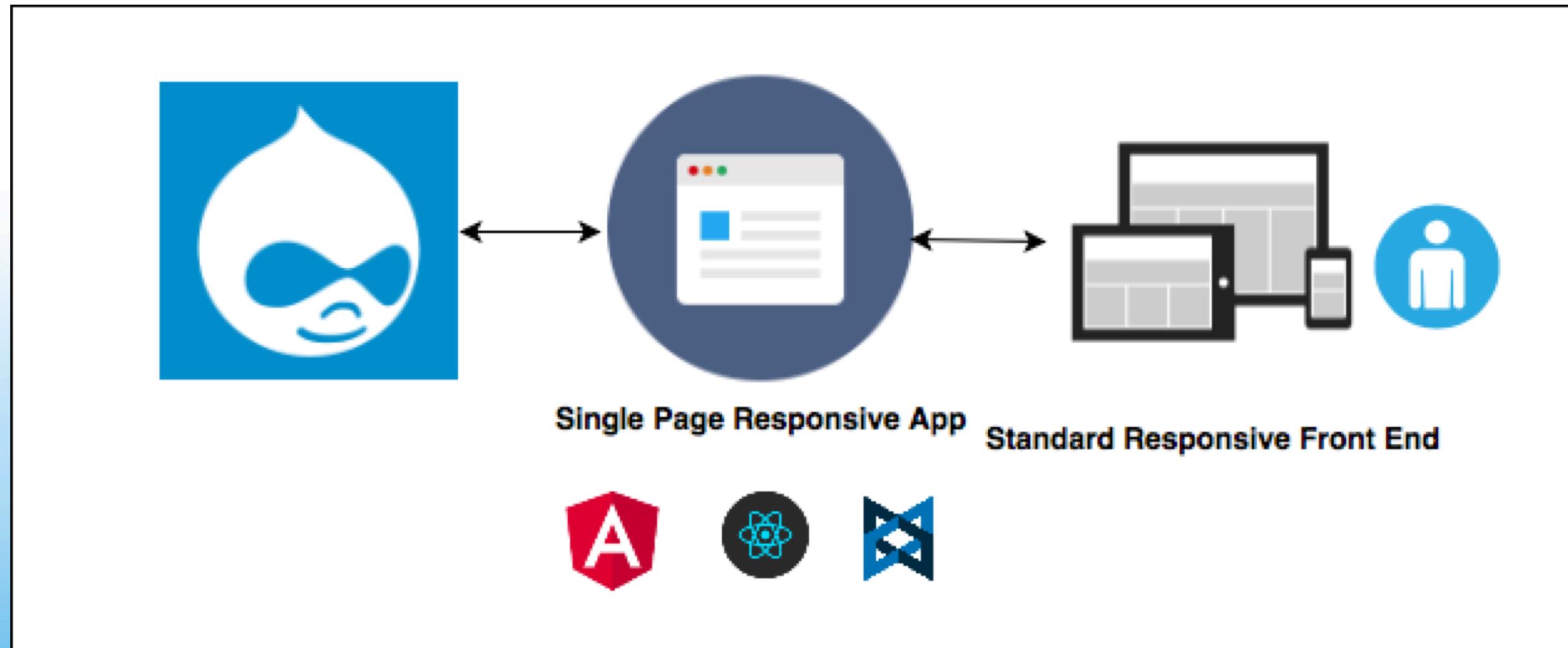
What can be done with Decoupled Drupal Site

- **Static Sites:** Central Content Hub pushing Content based on consumer and generating static content



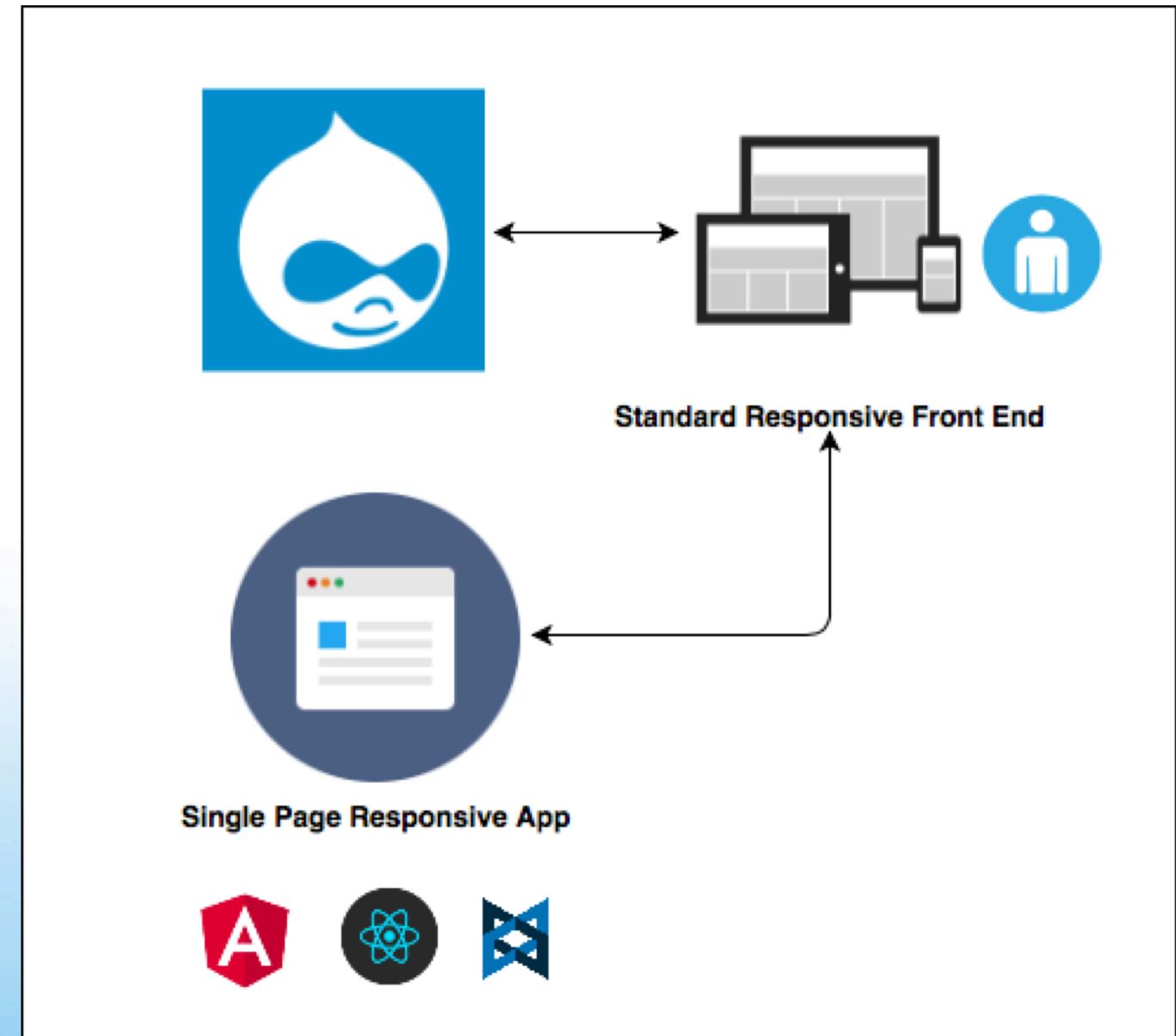
What can be done with Decoupled Drupal Site

- **Single Page Apps:** End-user's experience is a complete application-in-browser, usually leveraging one of the newer JS frameworks such as Angular, React, Backbone



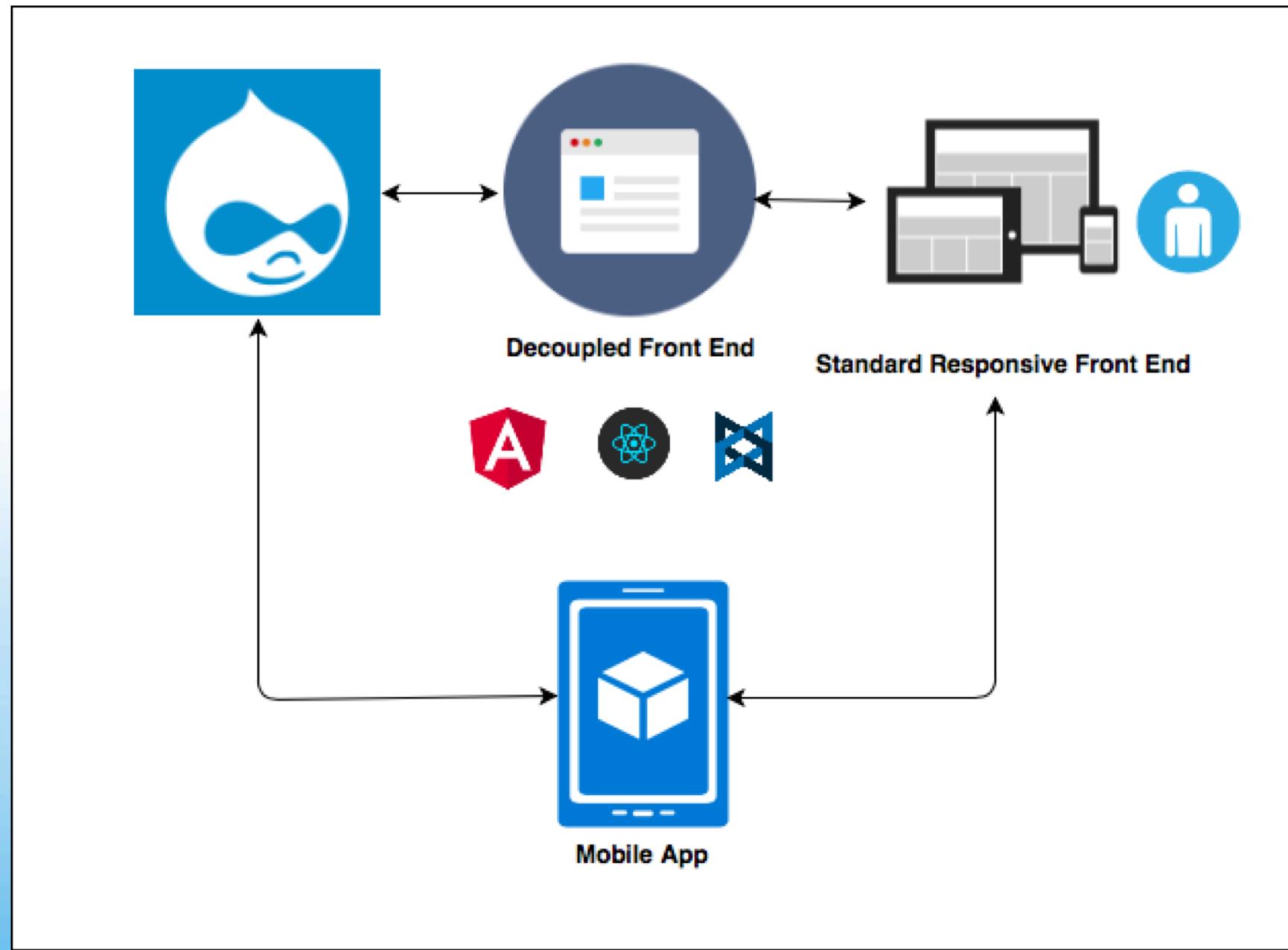
What can be done with Decoupled Drupal Site

- **Hybrid Websites:** Part of the website is interactive to communicates with the Drupal via RESTful API or might driven by external API's
- Good for applications like : Dashboard's, Quiz, Polls etc.
- JS frameworks uses to drive part of frontend
- Both Drupal and JS frameworks combinedly serves front end either loosed or tight integration with each other



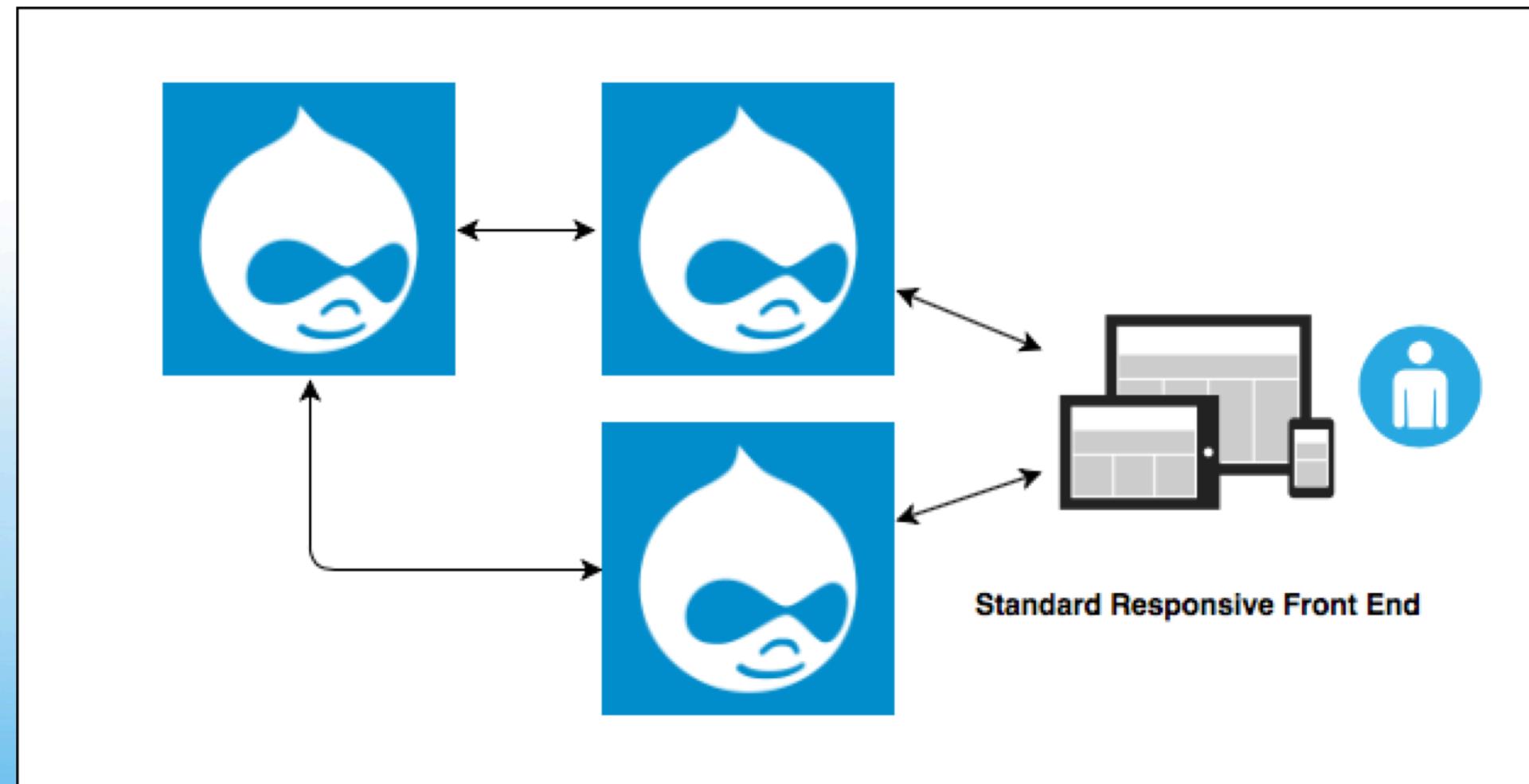
What can be done with Decoupled Drupal Site

- Native and Hybrid App:



What can be done with Decoupled Drupal Site

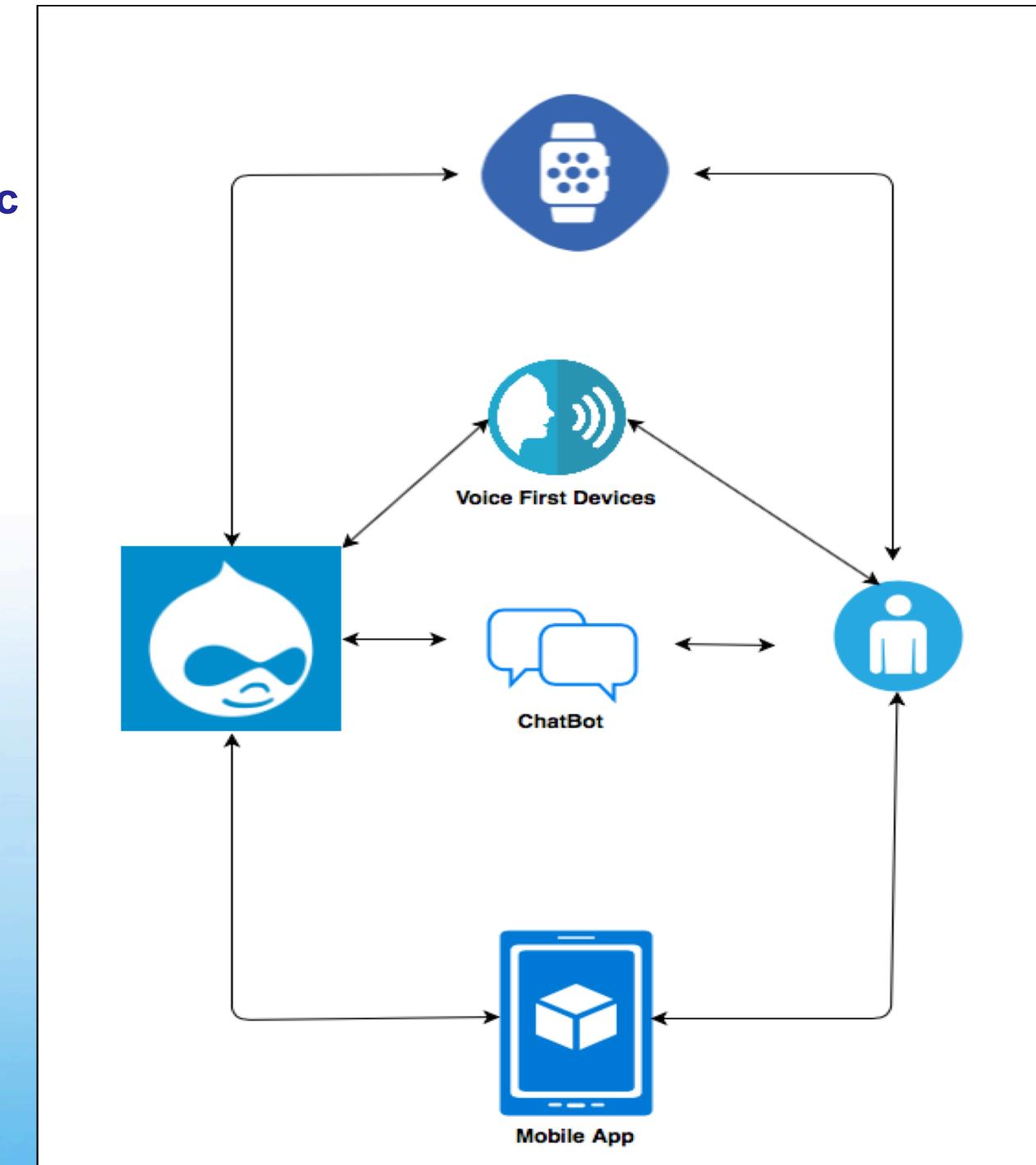
- **Multi CMS** : Decouple a Drupal CMS with another Drupal or CMS
- Helps in separation of concerns between content and layout / presentation and still gives Web Editor flexibility of CMS



What can be done with Decoupled Drupal Site

➤ Integrations

- ChatBots
- Voice first integration : Alexa / Google Home etc
- IoT Devices: Push button, Monitoring Tools



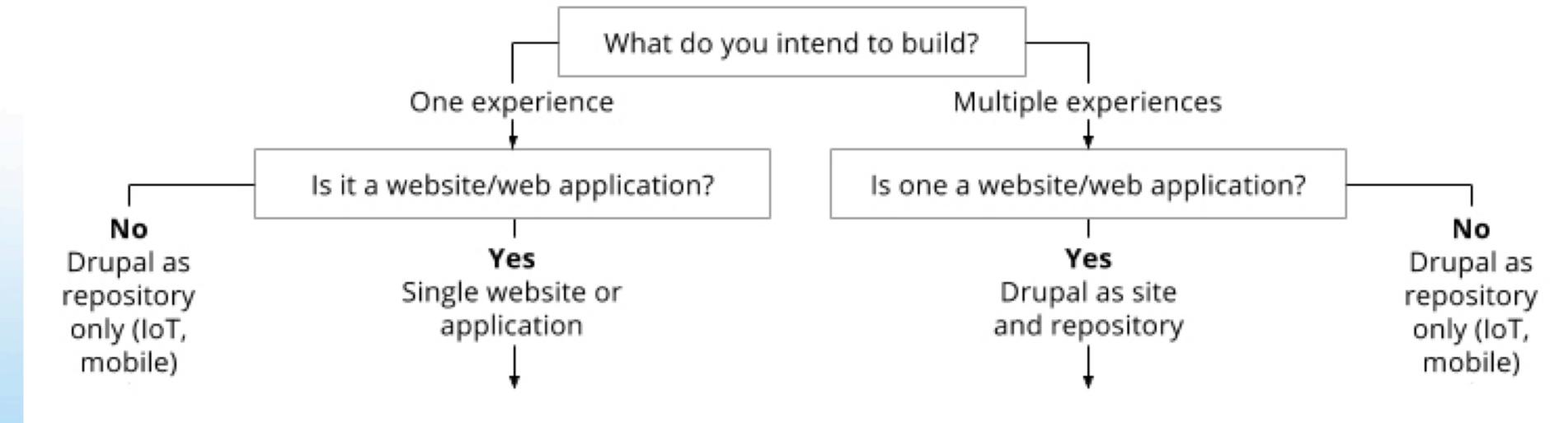
Factors for choice of Decoupled Drupal

- **Front End Freedom Vs Drupal Theme**
- **Integration Point and Omni Channel Touch Points Vs Website** : Website, Mobile App, Digital Signage, IoT Devices, Wearables, Bot's
- **More Consumers, Content Hub** : One Publisher to Many Consumer, Central content hub
- **Multi-channel and Multi-part Content** : Multiple CMS, Media(Videos / Audio / Docs), Social feeds etc.
- Multiple Teams:
 - *Mobile App Team*
 - *Web Team*
 - *Integration Team*
 - *Content Team*



Deciding Path for Decoupled Drupal

- What do you intend to build?
 - create a single standalone website or web application?
 - create multi experiences echo system (app, sites, integration points)

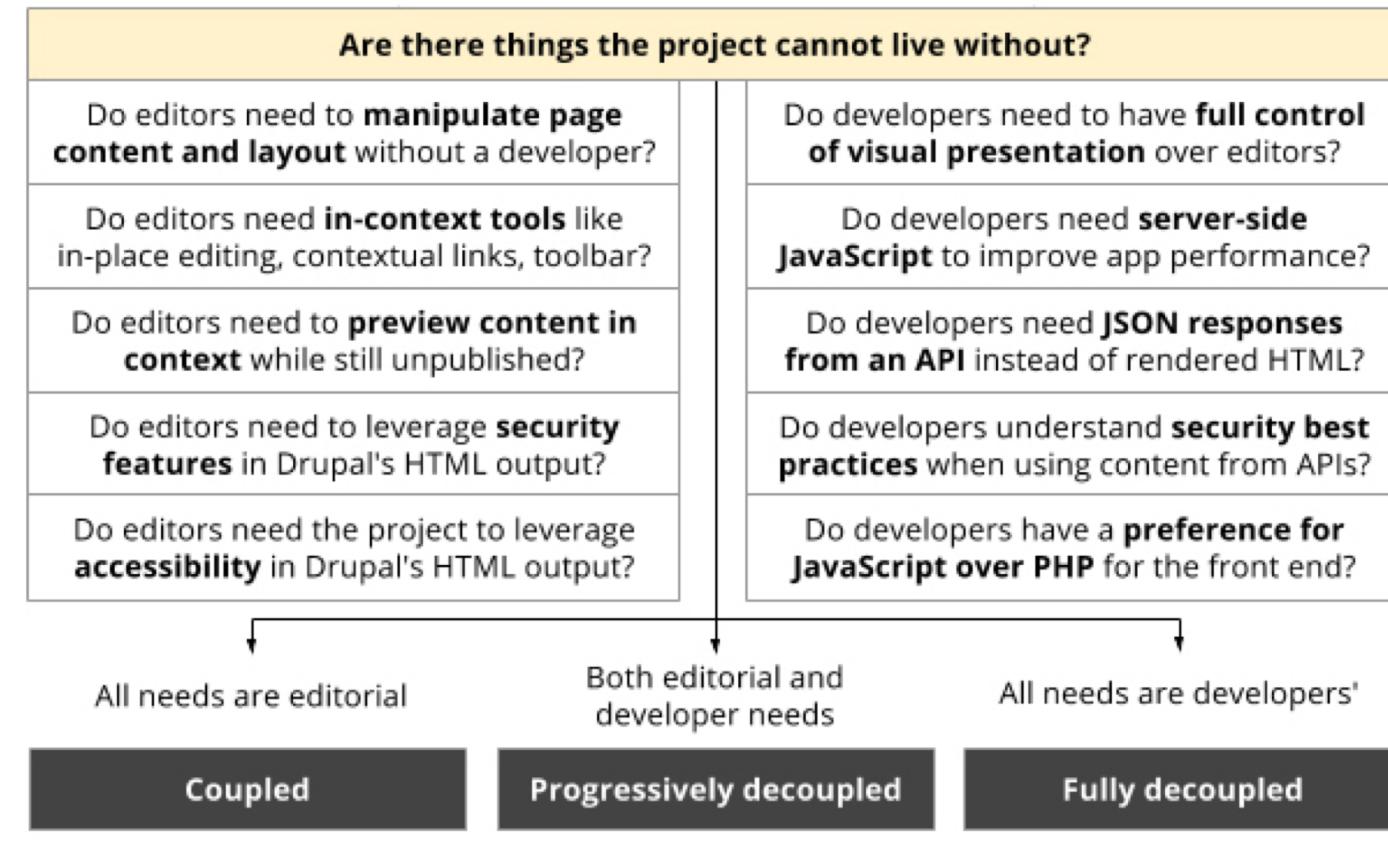


- Ref: <https://dri.es/how-to-decouple-drupal-in-2018>



Deciding Path for Decoupled Drupal

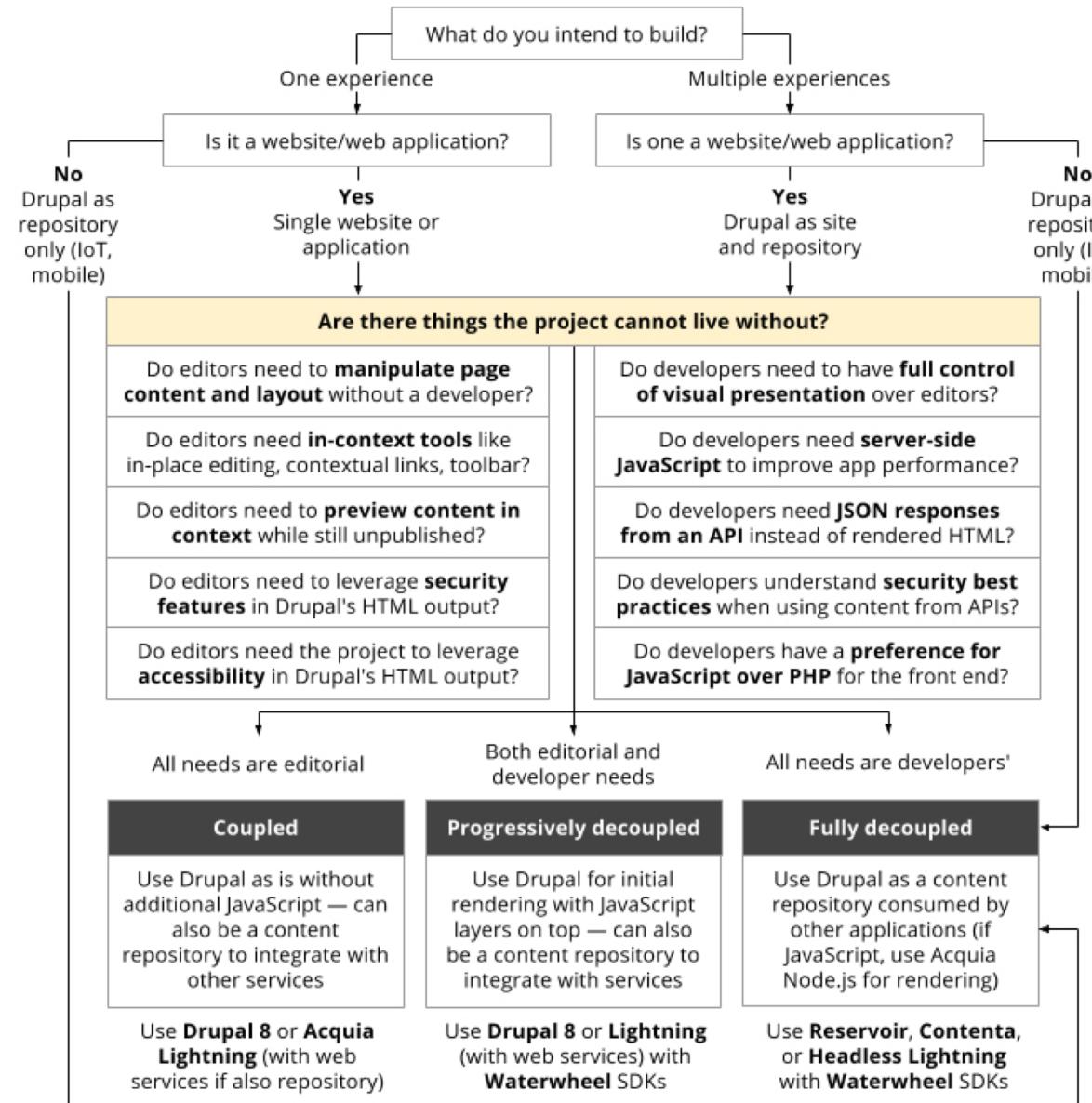
- Are there things you can't live without
 - Check Web Editorial requirements
 - Check requirements on Developer end both front end and back end



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Deciding Path for Decoupled Drupal



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User experience for Decoupled Drupal

➤ Front End Developer Experience :

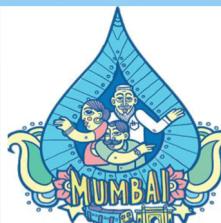
- Front End developers needs to learn new JS frameworks and select right framework
- Front end developers needs to consider security / performance measures
- Understanding of request formats like JSON / GraphQL

➤ Site Builder Experience:

- Strong content modelling considering multi channel content distribution
- Strong understanding of RESTful API standards and formats JSON API , GraphQL etc
- Testing strategy for API endpoints
- Documentation of API endpoints
- Authentication strategy needs to be evaluated :OAuth2 : Simple Auth

➤ Business User Experience:

- *Business needs to re align with separation of front end and back end :*
 - Site Preview / Content Publishing workflow
 - Auditing for Content for compliance purpose



Rewards in Decoupled Drupal

- **Clean API's** : All Integration points consumes relatively same API with power of Query and Filter data
 - REST / JSON / GraphQL
- **Independent Upgrades** : Content , Backend and Presentation layers are loosely coupled so both Front end as well as Back-End can be rebuild without depending on each other
- **Reduced dependency / reliance on Drupal Developers** for Backend and Front-End
- **Differentiated Development Velocities**
- **Write Once, Publish Everywhere : Eco-System**
- **Large Growth with help of API's**: Increase in App development, Integration points like Alexa, IoT, WebVR, ChatBot etc



Risk in Decoupled Drupal

- **One Point of Failure :** Sometimes decoupled architecture is complex to understand in situation of troubleshooting or debugging
 - Good testing strategy for API's should be in placed
- **Reinvent the Things:** Security and Input sanitization (CSRF, XSS) , Performance
- **Strict separation must be followed for front end logic:** Business requirements needs to be evaluated carefully while drafting **abstraction and constraints of Decoupled application**
- **“There is module for that” does not apply:**
 - *Contrib modules provides deep integrations with access level, routing etc. which becomes useless in certain cases for decouple applications*
 - *GA, SEO, Layout Patterns, Display management, Site Preview etc*
 - *Lacks Drupal benefits : improved performance*
- **High Skilled team with relatively large team size is required :**
 - *Dev Army : team with different skillsets*
 - *Drupal Ninja' : team with multiple skills sets along with Drupal*
- **Pain of Review and Audit:** Compliance review for content, Security, Updates, Regression Testing etc.



Use Case Demo

- **Use Case Demo**
 - **Centralised Drupal 8 Site JSON API and Viwe: Sessions Information**
 - **React Web Page to Pull Session Information**
 - **Alexa Integration with D8 : Session Information**





Thank You
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