



DANIEL DE FRANCISCO – JOSÉ MARÍA MUÑOZ

Headless Commerce

Unleash the power of APIs

 Liferay® **DEVCON**

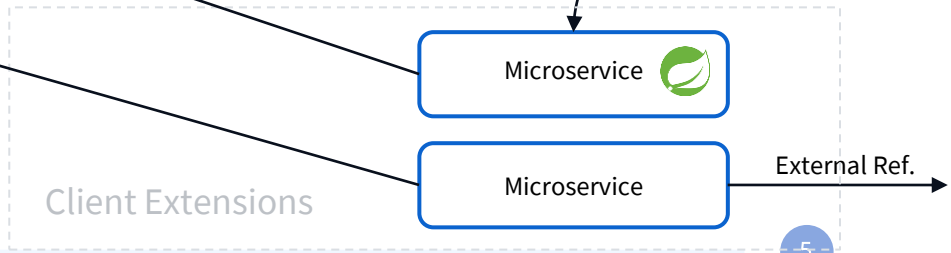
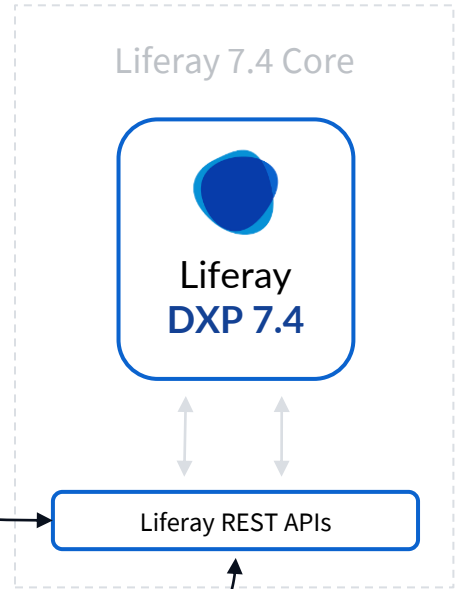
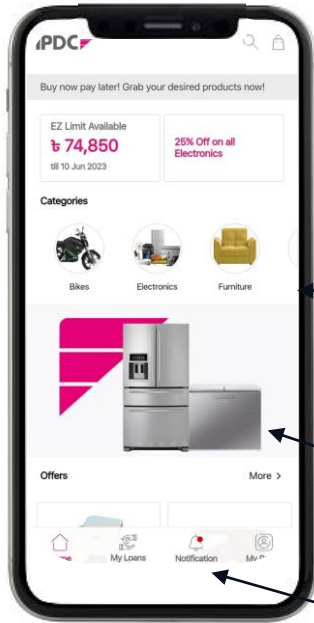
Headless Commerce

Unleash the power of APIs

Agenda

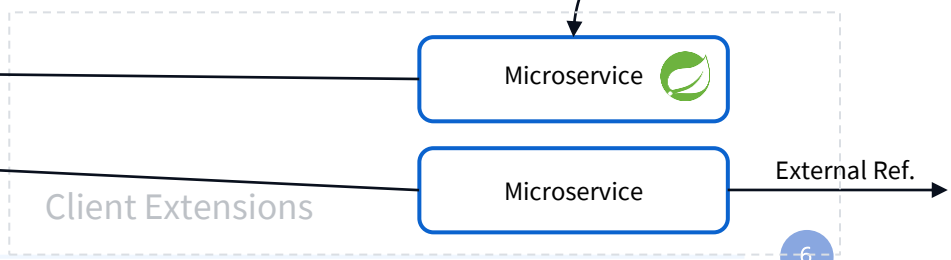
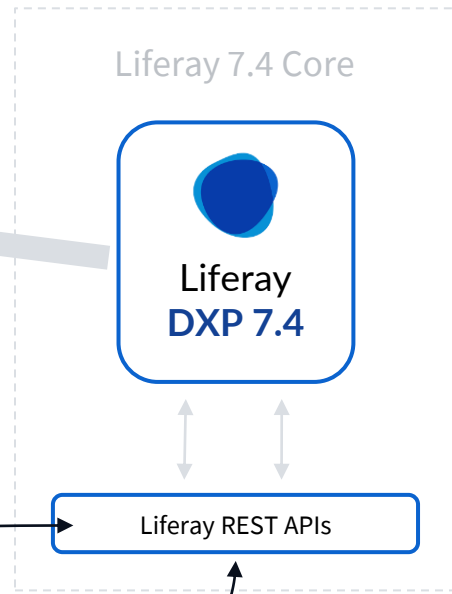
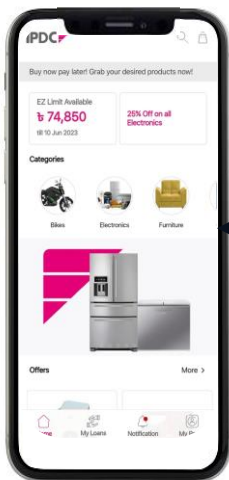
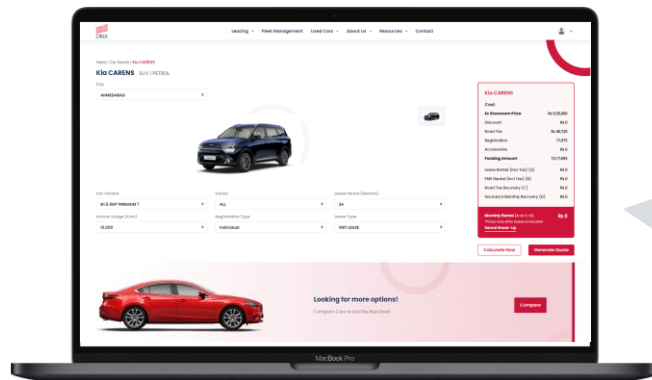
- ❑ Commerce Headless Front-end scenarios : pure, hybrid, composability
- ❑ Commerce Headless Back-end scenarios : Integrations
- ❑ Commerce Headless APIs : What we've got available
- ❑ Commerce Headless APIs : Where and how to use them
- ❑ Use cases and code samples:
 - ❑ Sales Rep App
 - ❑ Create Product Form Client Extension
- ❑ Takeaways

Headless Front-end scenarios

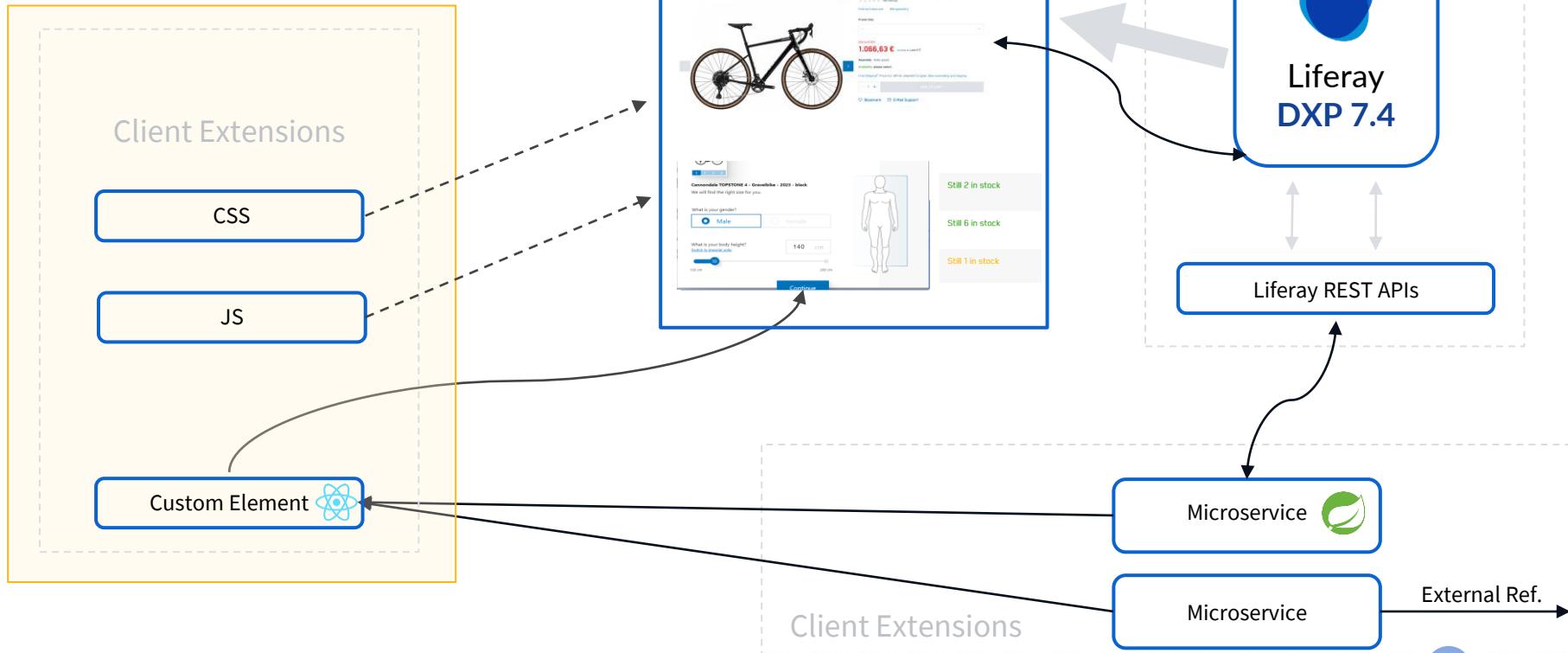


Pure Headless

Hybrid



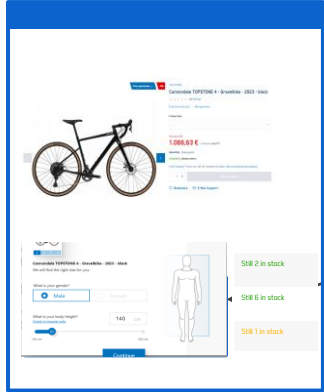
Composability




Headless Back-end scenarios


Integrations

Liferay Page



Client Extensions

Custom Element 

Microservice 

Real Time integration

Liferay 7.4 Core

Liferay
DXP 7.4

Liferay REST APIs

Data synchronization (products, orders, pricing, etc..)



Commerce Headless APIs: What we have

Administrative

Manage:

- Channels
- Catalog
- Inventory
- Pricing
- Business rules
- Accounts
- Orders and carts
- Shipments
- Storefront

Delivery

Get:

- Products
- Orders and carts
- Wishlists
- Inventory
- Pricing

Machine Learning

Get:

- Account Forecast
- SKU Forecast

Roadmap:

- Product Recommendations
- Loyalty Alerts

Commerce Headless API: Types of APIs

OPERATIONAL

GET, POST, PUT, PATCH DELETE

To serve headless clients
and/or Client Extensions

Example:

```
GET /v1.0/placed-  
orders/{placedOrderId}
```

To retrieve information of
the given placed order

BATCH

For Bulk operations

To create integration
jobs, initializations,
import/export, etc..

Example:

```
POST /v1.0/products/batch
```

To import a collection
of products in bulk

Commerce Headless APIs : Where and how to use them

Liferay API Explorer

To identify the service you wish to consume and sandbox to test them.

APIs

- Fully OpenAPI compliant
- REST JSon and GraphQL

Common API parameters:

Search, Filter, Sort, Paging

Liferay API Explorer

Liferay Commerce Admin Catalog API v1.0 OAS3

<http://localhost:8080/o/headless-commerce-admin-catalog/v1.0/openapi.json>

Liferay Commerce Admin Catalog API. A Java client JAR is available for use with the group ID 'com.liferay', artifact ID 'com.liferay.commerce.admin.catalog.client', and version '4.0.36'.

Apache 2.0

Servers

Attachment

- POST** /v1.0/products/by-externalReferenceCode/{externalReferenceCode}/attachment
- POST** /v1.0/products/by-externalReferenceCode/{externalReferenceCode}/attachment
- GET** /v1.0/products/by-externalReferenceCode/{externalReferenceCode}/attachment
- POST** /v1.0/products/by-externalReferenceCode/{externalReferenceCode}/attachment
- GET** /v1.0/products/by-externalReferenceCode/{externalReferenceCode}/images
- POST** /v1.0/products/by-externalReferenceCode/{externalReferenceCode}/ima

Commerce Headless API: How to use them

Using Credentials with Access to the Data:

- Basic Auth - During development only
- OAuth2 - Liferay allows to define an OAuth2 Application so the client can use the OAuth2 process to get an authorization token.

Some Utilities in Front-end Client Extensions (Javascript) or remote apps:

`Liferay.util.fetch(url)` - Automatically gets the token for current user and calls the API altogether

`Liferay.authToken` - Gets the token for current user in the front-end

`Liferay.OAuth2Client` - Connects to the OAuth2 Application to get the token

Commerce Headless API: Where and how to use them

In Summary, to authenticate the API calls:

If your rest API is from DXP headless -> ('x-csrf-token': `Liferay.authToken`) or `Liferay.Util.fetch`

If your rest API is a client extension backend project that contains `oAuth2ApplicationUserAgent` then `Liferay.OAuth2Client`

If your client is outside of Liferay through URLs

`/o/oauth2/authorize`

`/o/oauth2/token`

Example Use Cases & Code Samples



Sales Rep App

Headless Commerce Example



Dr. Milan Milanović 

@milan_milanovic

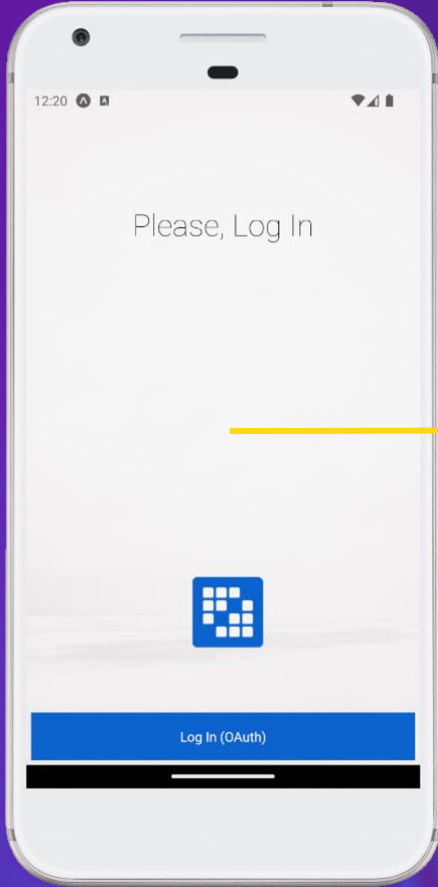


To replace programmers with AI, clients will need to accurately describe what they want.

We're safe.

Requirements

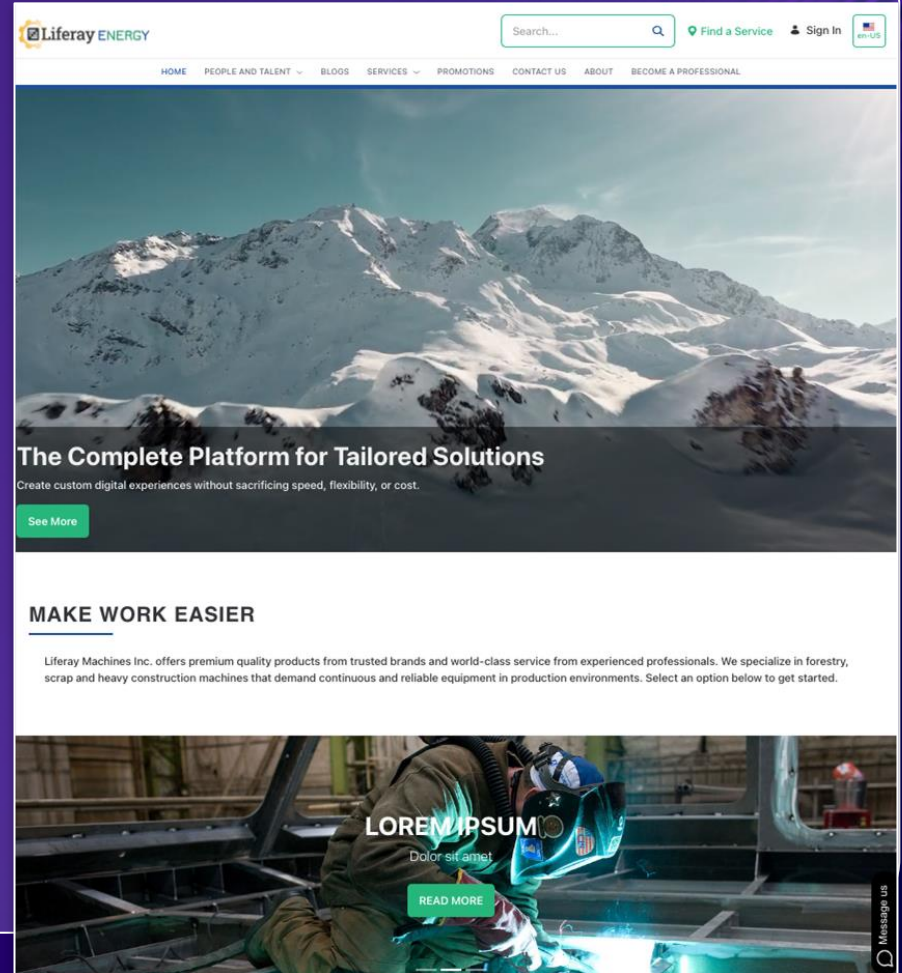
- ★ Sales Rep App for mobile.
- ★ Data privacy and security.
- ★ Accounts and Customers data.
- ★ Quick overview and Account status.
- ★ Capability to improve the App in the future.

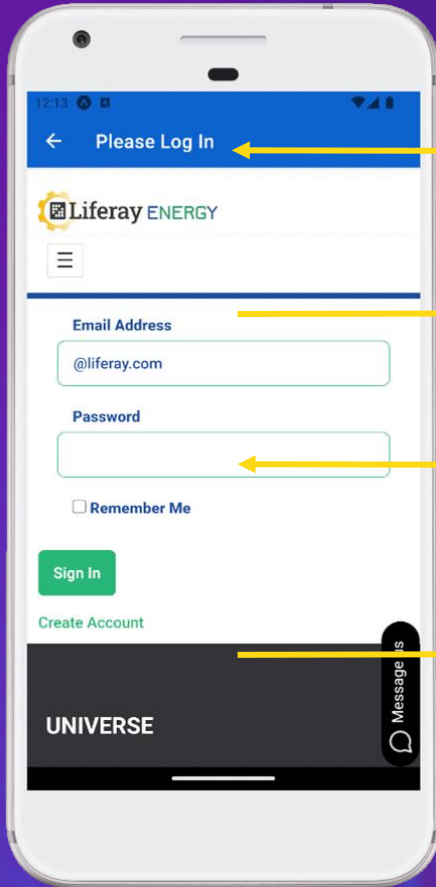


Authorization



```
/o/oauth2/authorize  
?response_type=code  
&client_id=XX..  
&code_challenge=YY..
```





Authentication



Sign In



Response Code

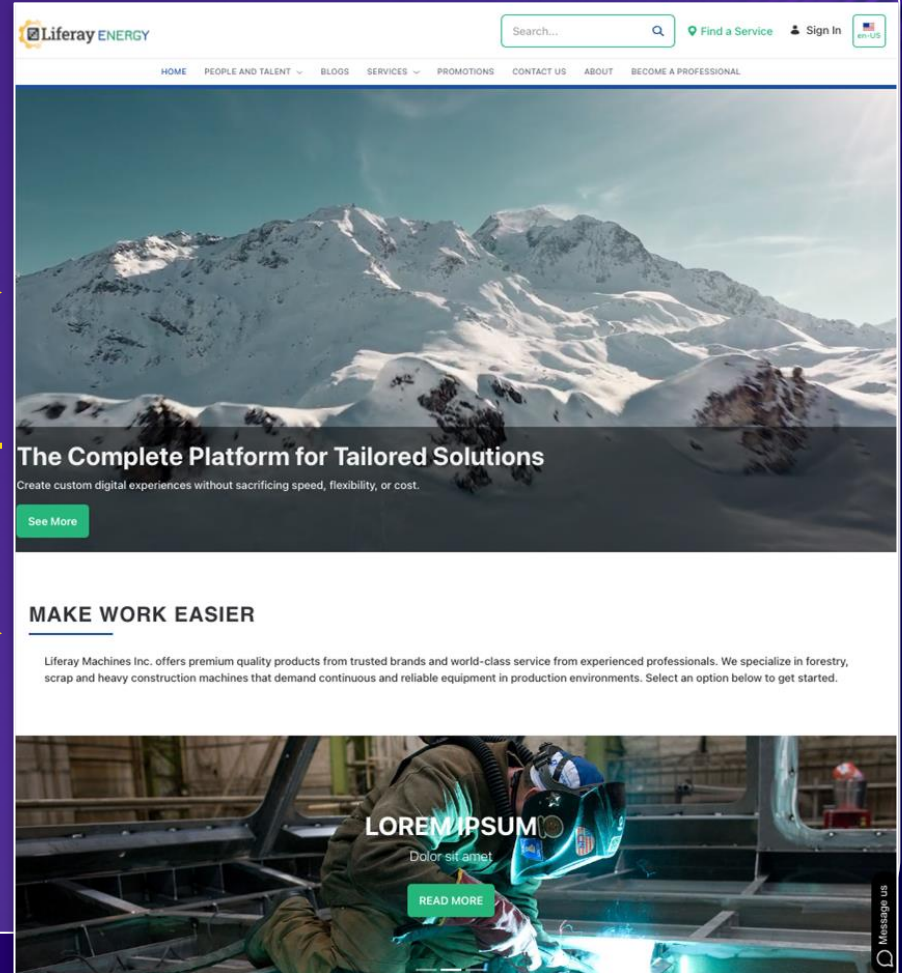


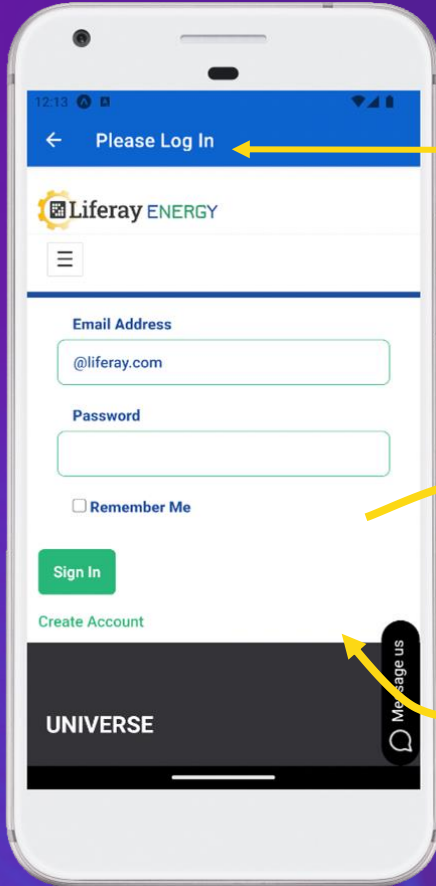
code=XX..

Auth. Token
/o/oauth2/token



clientId=XX..
grant_type:
'authorization_code'
code,
redirect_uri,
code_verifier

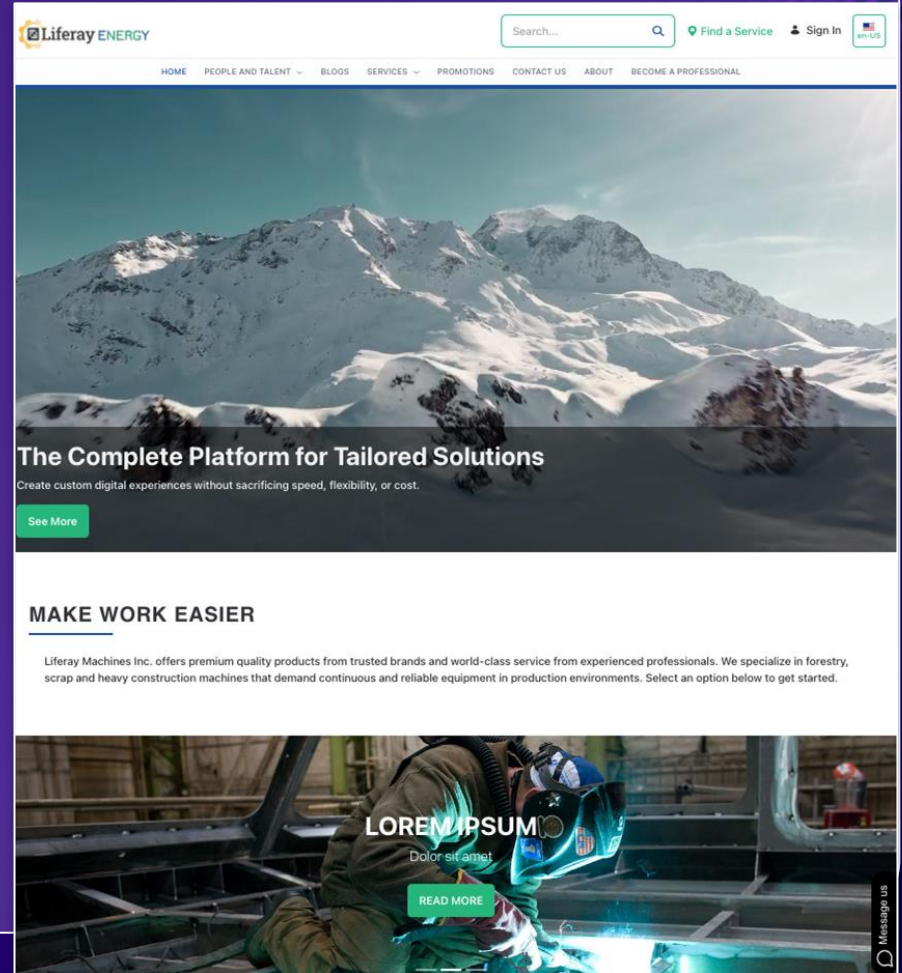


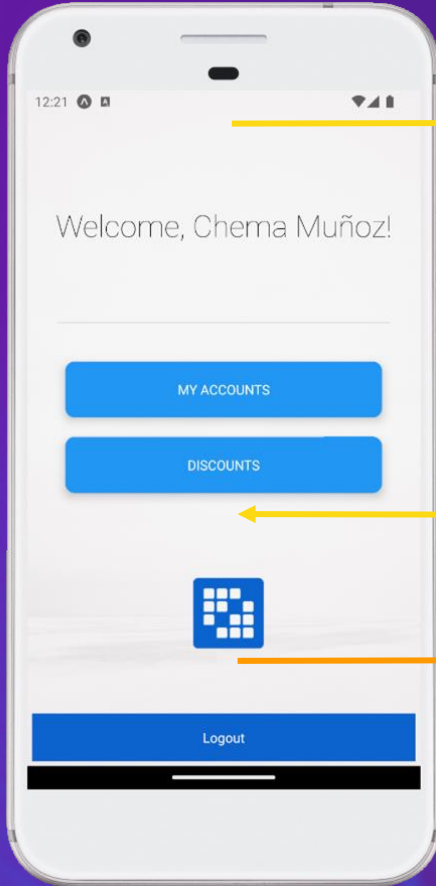


Access Token

access_token,
expires_in,
refresh_token,
redirect_uri,
token_type:
'Bearer'

Saving and
Managing All
the Info





API - User Info
/o/headless-admin-user/v1.0/my-user-account

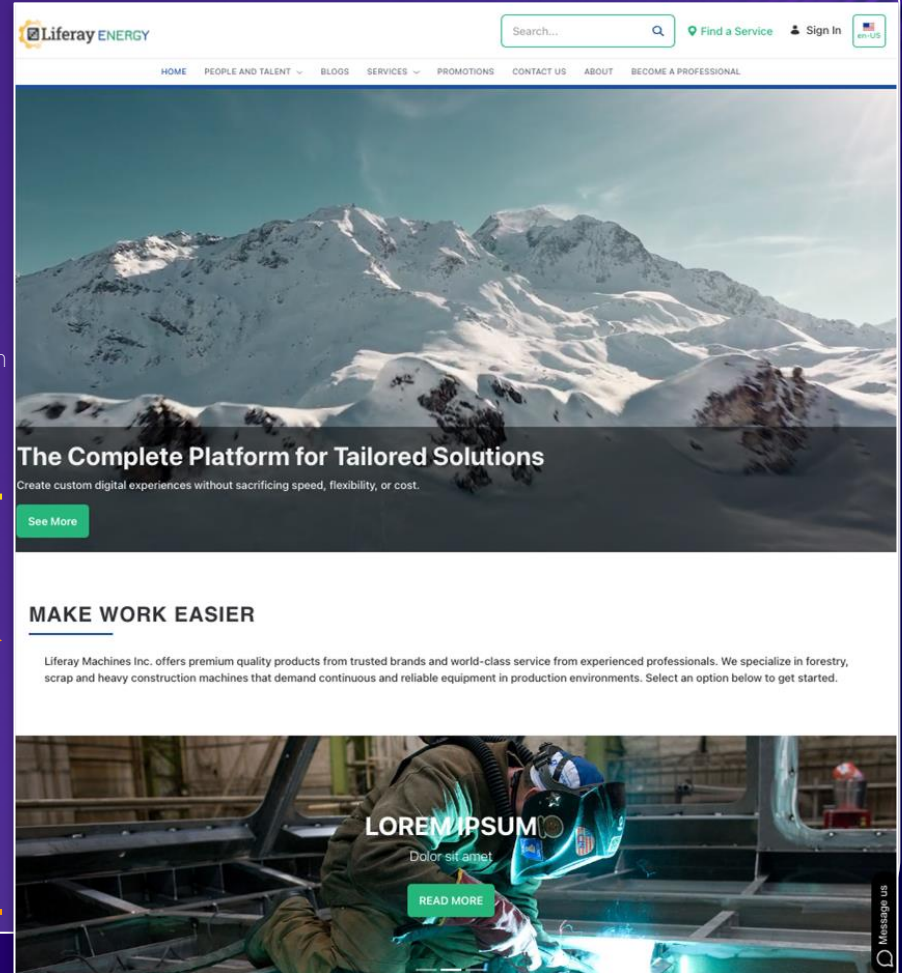
body,
content_type,
method,
...,
headers:
Authorization:
token_type,
access_token

Response Data

If Token Expires -
Refresh Token
/o/oauth2/token

clientId,
grant_type:
'refresh_token'
refresh_token,
code_verifier

New Token



Accounts

`/o/headless-commerce-admin-account/v1.0/accounts`

Color Status

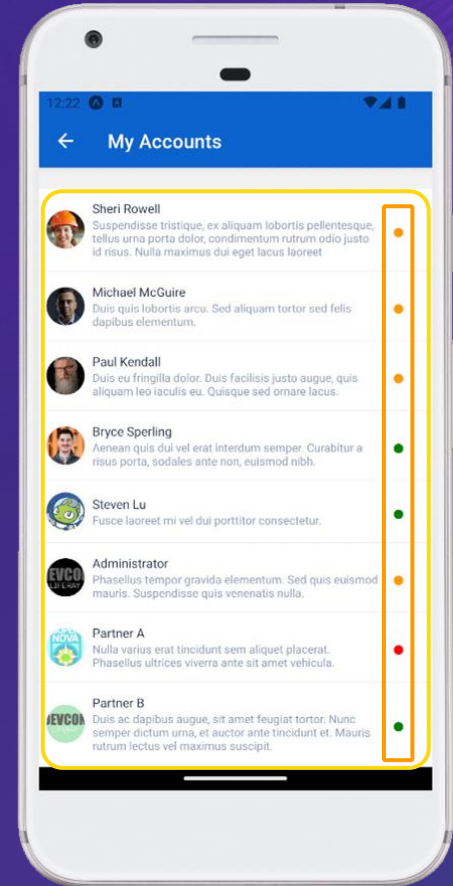
Channels

`/o/headless-commerce-admin-channel/v1.0/channels`

Placed Orders

`/o/headless-commerce-delivery-order/v1.0/channels/{channelId}/accounts/{accountId}/placed-orders`

The screenshot shows the Liferay API Explorer interface. At the top, it says "Liferay API Explorer" with tabs for "REST Applications", "Headers", and "GraphQL". The main heading is "Liferay Commerce Admin Account API" with a "v1.0" badge and a "QAS3" status indicator. Below the heading is the URL "http://localhost:8080/o/headless-commerce-admin-account/v1.0/openapi.json". A description follows: "Liferay Commerce Admin Account API. A Java client JAR is available for use with the group ID 'com.liferay', artifact ID 'com.liferay.headless.commerce.admin.account.client', and version '4.0.19'." Below the description is the "Apache 2.0" license. At the bottom, there is a "Servers" section with a dropdown menu showing "http://localhost:8080/o/headless-commerce-admin-account/" selected.



Liferay Commerce Admin Account API v1.0 OAS3

<http://localhost:8080/o/headless-commerce-admin-account/v1.0/openapi.json>

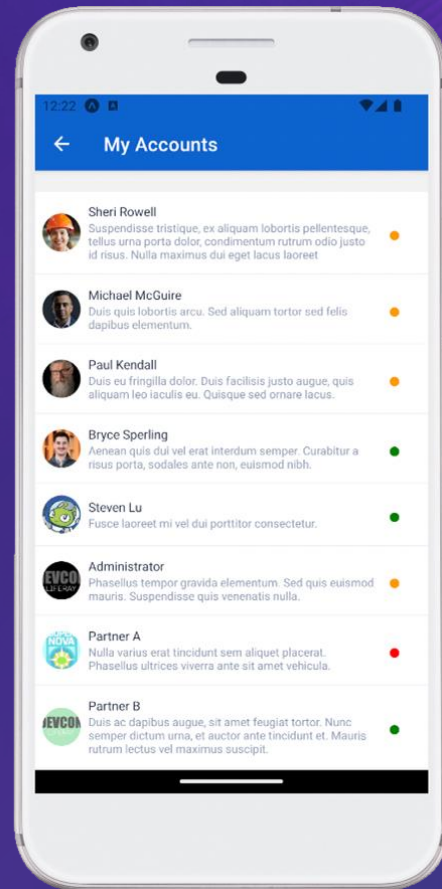
Liferay Commerce Admin Account API. A Java client JAR is available for use with the group ID 'com.liferay', artifact ID 'com.liferay.headless.commerce.admin.account.client', and version '4.0.19'.

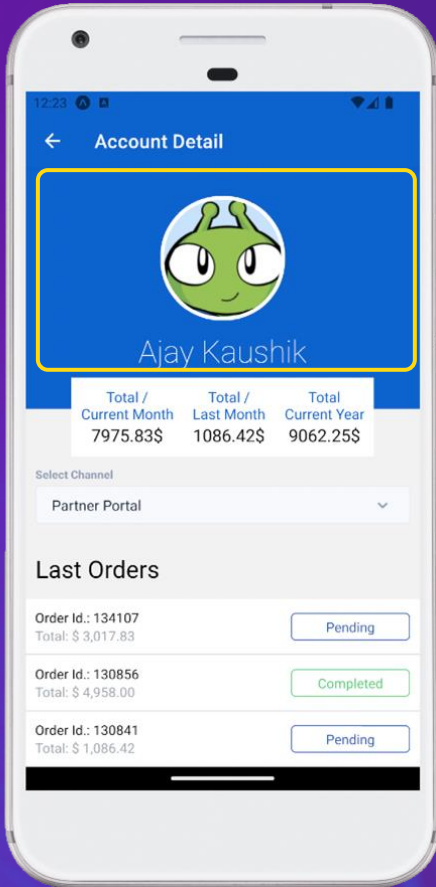
Apache 2.0

Servers

Account

DELETE	/v1.0/accounts/{id}	deleteAccount
GET	/v1.0/accounts/{id}	getAccount
PATCH	/v1.0/accounts/{id}	patchAccount
GET	/v1.0/accounts	getAccountsPage
POST	/v1.0/accounts	postAccount
POST	/v1.0/accounts/{id}/logo	postAccountLogo
DELETE	/v1.0/accounts/by-externalReferenceCode	deleteAccountByExternalRef





Account Details

`/o/headless-commerce-admin-account/v1.0/accounts/{accountId}`

Order, Shipments & Totals

Channels

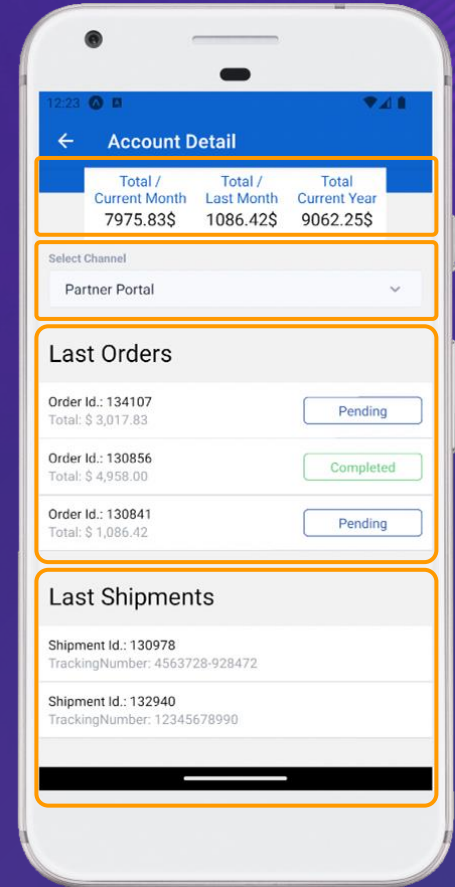
`/o/headless-commerce-admin-channel/v1.0/channels`

Placed Orders

`/o/headless-commerce-delivery-order/v1.0/channels/{channelId}/accounts/{accountId}/placed-orders`

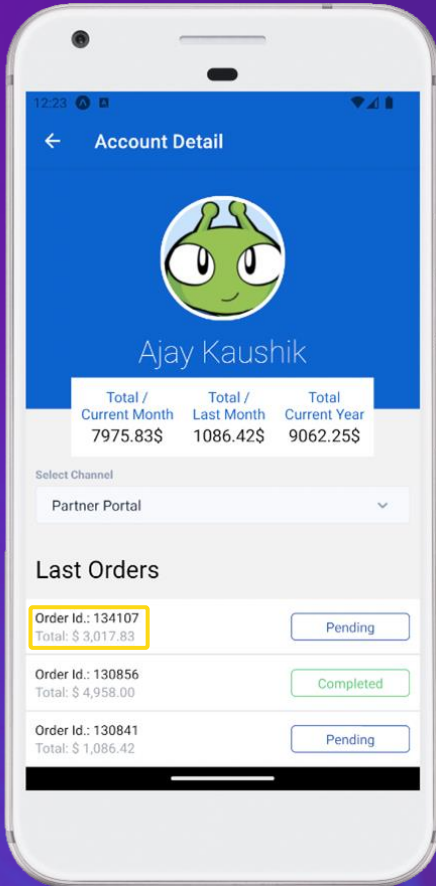
Shipments

`/o/headless-commerce-admin-shipment/v1.0/shipments`



Requirements

- ✓ Sales Rep App for mobile.
- ✓ Data privacy and security.
- ✓ Accounts and Customers data.
- ✓ Quick overview and Account status.
- ★ Capability to improve the App in the future.

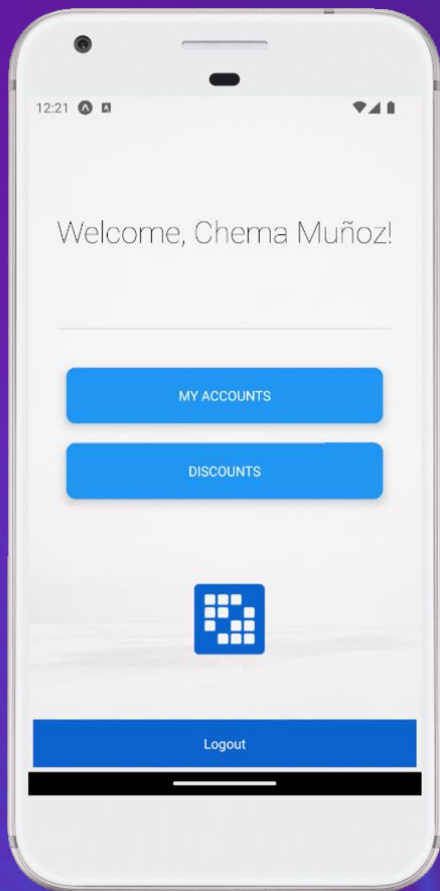


Update Data - Total cost

```
/o/headless-commerce-admin-order/v1.0/orders/{orderId}
```

Body

```
{
  ...
  "subtotalAmount": 12464.18,
  "subtotalFormatted": "$ 12,464.18",
  "subtotalWithTaxAmountFormatted": "$ 12,464.18",
  "subtotalWithTaxAmountValue": 12464.18,
  "taxAmount": 0,
  "taxAmountFormatted": "$ 0.00",
  "taxAmountValue": 0,
  "totalAmount": 12464.18,
  "totalDiscountAmount": 0,
  "totalDiscountAmountFormatted": "$ 0.00",
  "totalDiscountPercentageLevel1": 0,
  "totalDiscountPercentageLevel2": 0,
  "totalDiscountPercentageLevel3": 0,
  "totalDiscountPercentageLevel4": 0,
  "totalDiscountWithTaxAmount": 0,
  "totalDiscountWithTaxAmountFormatted": "$ 0.00",
  "totalFormatted": "$ 12,464.18",
  "totalWithTaxAmountFormatted": "$ 12,464.18",
  "totalWithTaxAmountValue": 12464.18,
  "transactionId": "",
  ...
}
```



Discounts

`/o/headless-commerce-admin-pricing/v1.0/discounts`

POST

DELETE

PATCH

Discounts

DiscountAccountGroup
`/v1.0/discounts/{id}/discountAccountGroups`

DiscountCategory
`/v1.0/discounts/{id}/discountProducts`

DiscountProduct
`/v1.0/discounts/{id}/discountProducts`

DiscountRule
`/v1.0/discountRules/{id}`

PriceEntry
`/v1.0/priceLists/{id}/priceListAccountGroups`

PriceList
`/v1.0/priceLists`

Let me share this
App...

<https://github.com/JosemariaMunoz/some-examples/tree/7.4/HeadlessCommerceDevconProject>

But also,

Let me give them
some credits... thank you!



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Liferay, Spain



Juan Manuel Rogado Manzanares
Senior Consultant (Global Services)
Liferay, Spain



Create Product Form

Headless Commerce Example

Create Product Form

Building a custom interface to allow end users to create new products.

Liferay Commerce has its own Out-of-the-Box PIM for admins, but we want to have a simplified form for end users.

Use the Client Extensions framework to create this app-widget

Use Cases:

- Marketplace with multiple vendors
- Used products & spare parts shop

Liferay Page

Sell Your Bike



Get pics of your bike

You just need to add a few details about the condition and three photos of the bike and your ad is online.



Sell to buyers from all Europe

Buyers can choose between pickup and shipping.



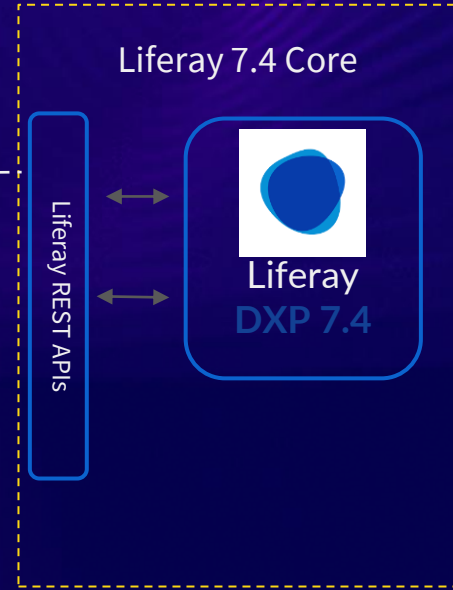
Get your money safely

With Raycyber you can be sure that you will always receive your payment in full.

Create your product

Model	Serial Number	
<input type="text" value="Model"/>	<input type="text" value="serialNumber"/>	
Manufacturer		
<input type="text" value="Sanchi"/>		
Description		
<input type="text" value="Insert your description here"/>		
Localization	Year	Hours
<input type="text" value="localization"/>	<input type="text" value="year"/>	<input type="text" value="hours"/>

GET /o/headless-admin-taxonomy/v1.0/taxonomy-vocabularies/" + props.manufacturerCategoryId + "/taxonomy-categories



Liferay Page

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Create your product

Model	Serial Number	
<input type="text"/>	<input type="text"/>	
Manufacturer		
<input type="text"/>		
Description		
<input type="text"/>		
Localization	Year	Hours
<input type="text"/>	<input type="text"/>	<input type="text"/>


```

143 const fetchManufacturers = () => {
144   let availableManufacturers = [];
145   Liferay.Util.fetch("/o/headless-admin-taxonomy/v1.0/taxonomy-vocabularies/" + props.manufacturerCategoryId + "/taxonomy-categories")
146     .then((response) => response.json())
147     .then((data) => {
148
149       data.items.forEach((element) => {
150         if (element.parentTaxonomyVocabulary.name === "Manufacturer") {
151           console.log(element);
152           availableManufacturers.push(element);
153         }
154       });
155     });
156   setManufacturers(availableManufacturers);
157   console.log(manufacturers);
158 }
159
160 useEffect(() => {
161   fetchManufacturers();
162 }, []);
163


```

Liferay Page


Sell Your Bike



Get pics of your bike
You just need to add a few details about the condition and three photos of the bike and your ad is online.



Sell to buyers from all Europe
Buyers can choose between pickup and shipping.



Get your money safely
With Raycycles you can be sure that you will always receive your payment in full.

Create your product

<small>Model</small>	<small>Serial Number</small>	
<input type="text" value="Model"/>	<input type="text" value="serialNumber"/>	
<small>Manufacturer</small>		
<input type="text" value="Sanchi"/>		
<small>Description</small>		
<input type="text" value="Insert your description here"/>		
<small>Localization</small>	<small>Year</small>	<small>Hours</small>
<input type="text" value="localization"/>	<input type="text" value="year"/>	<input type="text" value="hours"/>

POST /o/headless-commerce-admin-catalog/v1.0/products

POST /o/headless-commerce-admin-catalog/v1.0/products/"+productId+"/productSpecifications



Liferay Page

Sell Your Bike



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You just need to add a few details about the condition and three photos of the bike and your ad is online.



Sell to buyers from all Europe

Buyers can choose between pickup and shipping.



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With Raygoris you can be sure that you will always receive your payment in full.

Create your product

Model	Serial Number	
<input type="text"/>	<input type="text"/>	<input type="text"/>
Manufacturer	<input type="text"/>	
Description	<input type="text"/>	
Localization	Year	Hours
<input type="text"/>	<input type="text"/>	<input type="text"/>

```

102 let handleSubmit = async (e) => {
103   e.preventDefault();
104   alert("Creating product");
105   try {
106     let res = await liferay.Util.fetch("/o/headless-commerce-admin-catalog/v1.0/products", {
107       body: JSON.stringify({
108         active: "true",
109         catalogId: props.catalogId,
110         description: {en_US : description},
111         name: {en_US : model},
112         productType: "simple",
113         externalReferenceCode: serialNumber,
114         images: [{src: "string",externalReferenceCode: "IMAGE-FROM-REACT"+serialNumber, title:{en_US : "base64 image"}, type: 0, attachment: postImage.myFile}],
115         categories: [{id: manufacturer}],
116         productChannelFilter: "true",
117         productChannels : [{channelId:props.channelId, id: props.channelId}],
118         skus:[{price:sellprice, sku:model+serialNumber, published:"true"}],
119         customFields:[{name:"Vendor Email",customValue:{data:email}},{name:"Vendor Name",customValue:{data:name}}]
120       }
121     ),
122     method: 'POST',
123     headers: [
124       ['Content-type', 'application/json'],
125       ['Accept', 'application/json']
126     ],
127   })
128   let resJson = await res.json();
129   if (res.status === 200) {
130     addProductSpecificationHours(resJson.id,hours);
131     addProductSpecificationLocalization(resJson.id,localization);
132     addProductSpecificationYear(resJson.id,year);
133     setMessage("Product created successfully");
134   } else {
135     setMessage("Some error occurred");
136   }
137 } catch (err) {

```

Create Product Form app

BACK-END

- ★ Liferay Commerce Catalog
 - Product Specifications
 - Media
 - Pricing
- ★ Liferay Categorization capabilities
- ★ Liferay Custom Fields Capabilities
- ★ Liferay search capabilities
- ★ Liferay Objects actions for automatizations

FRONT-END

- ★ Using Clay components for the form
- ★ Leverage Liferay Commerce display widgets

Sell your bike - Raybikes - Liferay


localhost:8080/web/raybikes/sell-your-bike

Demos data - Goog... DXP Repos Github Liferay-Commerce Sites made with Lif... Liferay Inc. Pre-Sales Books & KB Liferay Analytics CL... DXP Cloud Liferay Community... Liferay Sales LIFERAY APIs Liferay Themes AWS Talend Connector

Sell your bike


Home Sell your bike Bikes

Sell Your Bike




Get pics of your bike

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Get your money safely

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Búsqueda

18:44
21/05/2023

Takeaways

- ★ The benefits of Headless Composability can complement the OOTB Liferay Commerce Platform - Best of both worlds
- ★ Create different touchpoints with a unique source of data
- ★ Get your commerce data into Liferay Commerce to unleash all the digital experience power
- ★ Decoupling of customizations and DXP core
 - Liferay Client Extensions use Liferay APIs as their gateway
- ★ Unlimited integrations with 3rd-party systems
 - Let the APIs talk between each other



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Please share your rating in
the event app. Thank you!