The Kraken Effect
JavaScript’s Impact on PayPal

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In 2013, I spoke about releasing the “kraken”
What PayPal was like in 2011

- 180 days to create an app
- 4-6 week cycles for pushing code
- Very long cycles for experimentation
- Heavy, centralized framework teams
KrakenJS released in 2013

Standard for all PayPal apps

First popular open source framework from PayPal
The real impact has been from the introduction of JavaScript and Open Source.
Ease of creating apps

It used to take 180 days to get a new app created and put into production!
Number of node apps live H1 2013

PayPal experiences prior to NodeJS were primarily very dated in their appearance
Number of node apps live H2 2013
67

In just 18 months

We also trained hundreds of developers in both JavaScript and Node

Number of node apps live NOW
From weeks to minutes
In 2011, even a simple content copy change could take as much as 6 weeks to get live to site.
2013: 1 minute for a content change

PayPal marketing pages run on a NodeJS content management system using GitHub as the repository for its content.
Because of dependencies on classic monolithic CGI PayPal app, it could take 2 months to change header.
2 minutes to change header/footer

Because of dependencies on classic monolithic CGI PayPal app, it could take 2 months to change header.
300 live code pushes in a few months

Checkout requires deep analytics as just a few basis points change in conversion is significant
3 Experimentation mindset

JS & OS leads to shift-refresh and quickly adding new software
The UI Layer is the Experimentation Layer
a tale of two trains

departs infrequently
“gotta get on the train or I will have to wait a long time”

departs all the time
“if I miss this train another one comes in a few minutes”
Existing stack wasn’t good for rapid prototyping

Prototyping was hard

“ui bits” mostly lived here

Proprietary JAVA centric UI FW

Optimized for the Java developer, not the front end application developer

JSP

Needed Java developers to make the UI work

Java Components
NodeJS for prototyping

The shift-refresh nature of Node development works well for LeanUX
Your order summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Subtotal</td>
<td>$60.00</td>
</tr>
<tr>
<td>Item price: $60.00</td>
<td></td>
</tr>
<tr>
<td>Quantity: 1</td>
<td></td>
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<td>$7.80</td>
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<tr>
<td>Shipping and handling</td>
<td>$12.71</td>
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<tr>
<td>Total</td>
<td>$80.51 USD</td>
</tr>
</tbody>
</table>

Review your information

Shipping address
- Valued Customer
- 123 Street Dr
- City, ST 12345
- United States
- Note to seller: Add

Payment methods
- Instant Transfer: Chase Manhattan Checking (Confirmed)
- $80.51 USD

PayPal will use your bank card or PayPal account to fund this transaction if your bank does not have enough funds.

Redeem PayPal gift card, certificate, reward, or other discount.

View PayPal balances and your payment method balances.

Contact information
- valued_customer@gmail.com

You're almost done. You will confirm your payment on My Volusion Store.

Cancel and return to My Volusion Store.
after
First PayPal app in AngularJS
dustjs, angular, ember, react, react native
nodejs as apps, nodejs as services
4 Democratize the code

Deliver us from evil centralized, bloated frameworks and deliver the open source to our souls
What PayPal is like now after the impact of JS & OS

- Simpler to create apps
- Code velocity is higher
- Experimentation is enabled
- Frameworks/product code is democratized