



# **“The Browser Perspective”**

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# Agenda

1. Introduction
2. Why Chrome cares
3. A (brief) history of payments in Chrome
4. What we've learned
5. Looking towards the future
6. Questions / Comments / Discussion

# Introduction

# Hi, I'm Zach Koch

Chrome Product Manager. Developer. Integrator of one-too-many payment solutions.

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# Chrome and Payments

(why we care)



# ~10%

of people's time online is spent shopping

# \$1.47 trillion

estimated worldwide eCommerce revenues for 2014



# Browser values

Great web experience for users (fast, secure, intuitive)

Make developers who rely on the web successful

Continue being free and open

**Buying (and selling)  
things on the web is a  
terrible experience**

form field validation error handling payment schemes networks form fields security  
codes insecure tiny keyboards multiple screen sizes fraud buggy javascript multi page  
checkout flows forced registration lack of authentication no loyalty mechanism hard to  
implement high swipe fees chargebacks PCI compliance intrusion detection payment  
service providers encryption technologies receipts TEE payment gateways decentralized  
currencies ACH foreign currencies shipping and billing addresses biometrics two-factor  
authentication expiration dates internationalization accessibility multi-country support  
payment gateways returns and exchanges liability customers

**PayPal**<sup>TM</sup>



**Recurly**



**First Data**<sup>TM</sup>



**Braintree**  
A PayPal Company



**CHASE** <sup>TM</sup>  
Paymentech



**DWOLLA**



**Skrill**



**Bank of America**   
Merchant Services



**Authorize.Net**<sup>®</sup>

# >50%

time spent shopping online is on **mobile**

**Things were bad on  
desktop, but they're  
worse on mobile**

12:48

https://ssl.m.bestbuy.com

**BEST BUY**

**Sign In**

E-Mail Address

Password [Forgot your password?](#)

**Sign In**

OR

**Checkout as Guest**

**Create an Account**  
Track your order online • View order history  
• Speed up checkout next time

12:48

https://ssl.m.bestbuy.com

**Billing** > Shipping > Payment > Review

**Billing Address**  
Use address from your credit card statement.

First Name

Last Name

Address

Address 2  
*Optional*

City

State

12:50

https://ssl.m.bestbuy.com

**Shipping & Handling**

Get it by:

- ☒ **Wed, Mar 11 - FREE**  
Standard
- ☐ **Tue, Mar 10** - \$25.99  
Expedited
- ☐ **Mon, Mar 9** - \$47.99  
Express

Gift Options

Send a gift message ☐

Get Order Updates by Text  
*For each item in your order*

Your Cell Phone Number

*Optional*

Message and Data Rates May Apply. See full Best Buy Order Status [terms and conditions](#). For help, text HELP to 332211. To opt out, text STOP to 332211.

12:50

https://ssl.m.bestbuy.com

**Billing** > **Shipping** > Payment > Review

**Delivery Information**

**Insignia™ - 32" Class (31-1/2" Diag.) - LED - 720p - HDTV - Black** [Remove](#)

Model: NS-32D312NA15  
SKU:6080010

Ship to Address [Pickup Instead](#)

**zach koch**  
3143 FOLSOM ST  
SAN FRANCISCO, CA 94110  
USA

[Change Address](#)

Shipping & Handling

12:50

https://ssl.m.bestbuy.com

**Billing** > Shipping > **Payment** > Review

**Payment Information**

Credit Card

Card Type  
MasterCard

Card Number

Expiration Date  
06 2017

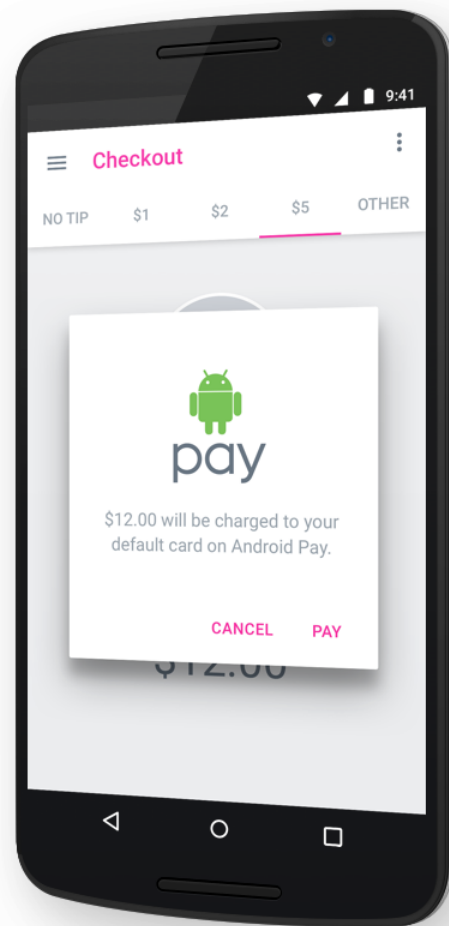
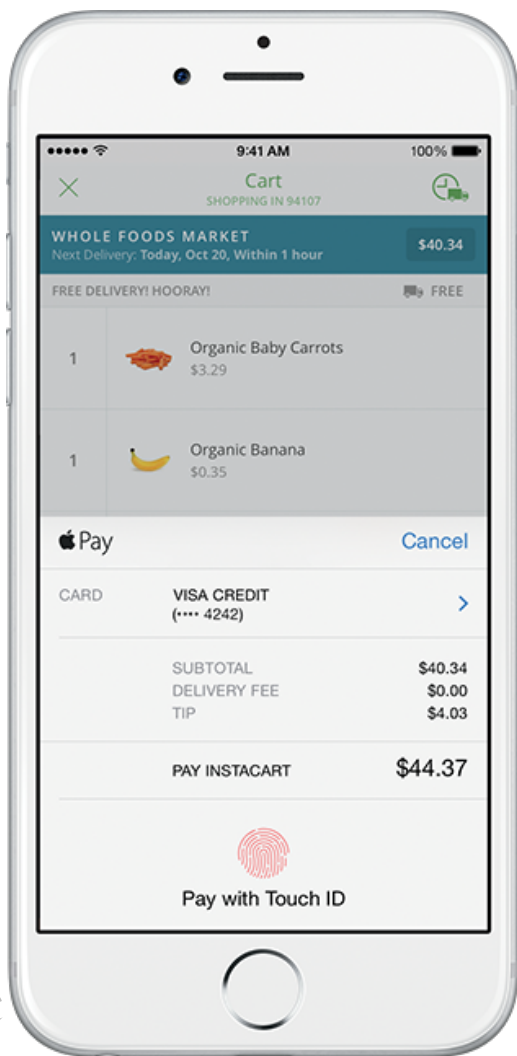
1 2 ABC 3 DEF -

4 GHI 5 JKL 6 MNO .

7 PQRS 8 TUV 9 WXYZ X

\* # 0 + >

Common mobile checkout flow





# **A History of Payments & Browsers**

(and why it's not good enough)

# Timeline

**2010**

Autofill is  
launched

Google

# Autofill

A mobile application interface is shown. At the top, a status bar displays signal strength, Wi-Fi, and battery icons, along with the time 16:40. Below this is a browser-like address bar with a green lock icon and the URL 'https://output.jsbin.com'. The main content area has a blue header with the text 'Sign up for Parking in the City' and 'The best parking in the city.' Below the header is a 'Contact Info' section. It contains three input fields: 'Name' with the placeholder 'Full name', 'Email' with the placeholder 'name@example.com', and 'Confirm Email' with the placeholder 'name@example.com'. The bottom of the screen shows the Android navigation bar with back, home, and recent apps icons.

# Timeline

**2010**

Autofill is  
launched

**2013**

rAc  
mozPay

# requestAutocomplete()

- WHATWG Standard
- Native browser UI to handle checkout flow (website calls requestAutocomplete())
- Introduced autocomplete attributes
- Optimized for both desktop and mobile
- Strong i18n support
- Very, very little use :(

The touchy-fe

## Welcome!

Are you a hot-shot business-per  
friends and family? Well, don't w  
and people won't even notice y

What's more, all of our products  
"three". Look, this is getting conf  
feely-friendly with people on you



### Simple hug

We'll send som  
arms-around, S  
smile afterwar



### Virtual hug

Perfect for those  
recipient, maintaining eye-contact, and wrap our arms around them without  
actually touching their body. We'll whisper "This is a non-touchy hug" in their  
ear so they know what's going on.



### "Proud of you, son"


We'll get on our knees to be head-height with the recipient, put one hand on

Pay

Google Wallet disabled ▼

☐ Save and protect your details with Google Wallet. ⓘ

#### Card details



VISA Visa ...1111

CVC



#### Billing details


Name

Street address

City

State


ZIP code

United States 

Phone number ⓘ

Email address

#### Shipping address



Same as billing address


☒ Save details in Chrome ⓘ

Cancel

Continue



#### Basket

1 Double finger-pistol salute 

Checkout

# Timeline

**2010**

Autofill is  
launched

**2013**

rAc  
mozPay

**2015**

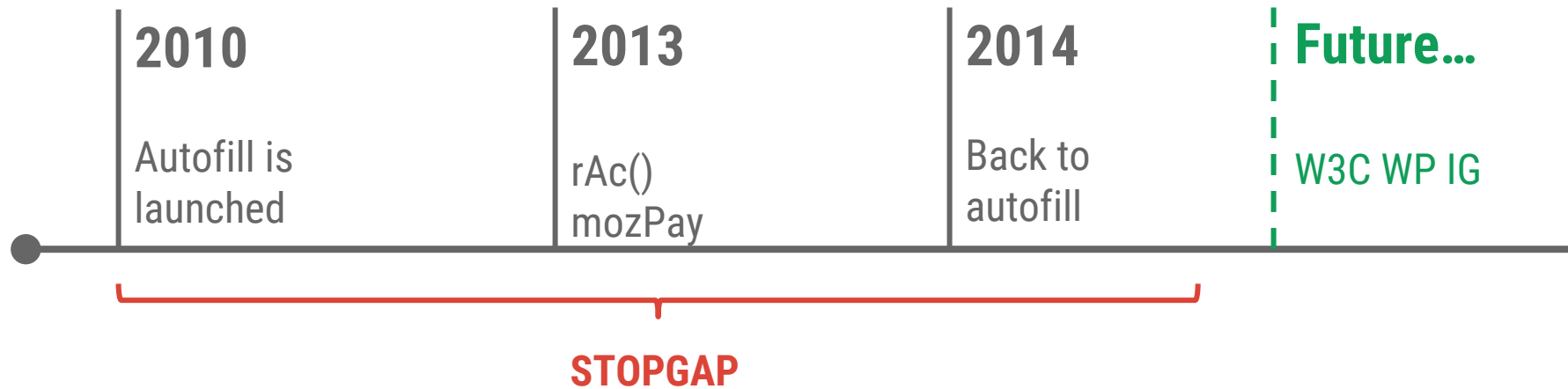
Back to  
autofill

# Autofill (again)

- Encouraging use of autocomplete attributes
- Recent integration with Google Payments
- Trying to help people better curate autofill profiles



# Timeline



# But first...

## What have we learned?

- Merchants are very averse to making changes and are very slow to adopt new technologies
- If you build it...there is no guarantee they will come
- Incentive structure must be in place for all players

# Incentives

## Consumers

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**Fast, easy checkout**

Great UX

Mobile friendly

Secure, private

## Merchants

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**Bottom line**

Low fraud, no liability

Passable UX

Really like user data

Easy integration (few  
dev resources)

## Browser

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**Great user experience**

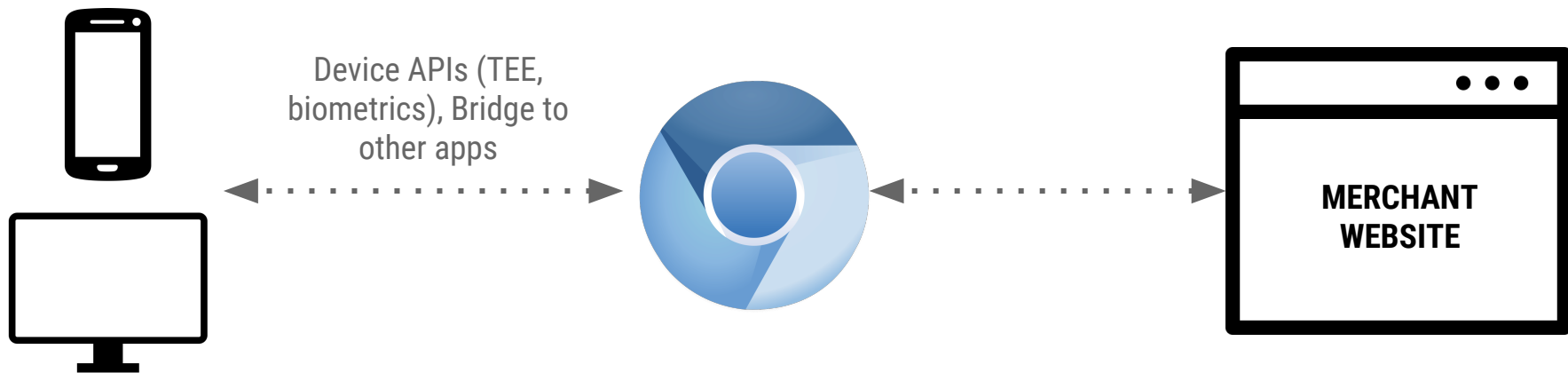
Great developer  
experience (fast,  
easy)

Open, secure

# Looking towards the future

(shorter and longer terms)

# Browsers sit at an interesting place



# Goals

Great UX (no forms, tap/click to pay)

Bring high assurance level to CNP transactions (reduced fraud)

Protect users and merchants with tokenization (EMVCo)

A facilitator of web payments, *not* a processor

Not a wallet, doesn't store payment credentials

# V1 Use Cases

## Website payments

- Discovery (website)
- Selection of instruments (possible automatic)
- Authentication and access to instruments
- Payee initiated
- Tokenization

# Important to Browser

## Subscriptions

- Many subscription services on the web

## Biometrics



**Thanks. Questions? Comments?**