Implementation Considerations and Future Plans

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Web Payment IG

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Web Payment WG

Moving quickly on minimal standards for Web Payments

- Payment Request from Payee
  - Amount, currency and brief description for account statements
    - Machine interpretable transaction id to connect payment to commercial transaction
  - Which payment schemes the merchant accepts
    - Globally registered identifiers for payment schemes
  - Additional fees associated with use of particular schemes
    - Along with explanations (standard codes?)
      - Terms & conditions could depend on payment scheme
  - Information on how to pass proof of payment to payee
  - Identity of payee in respect to each payment scheme
    - Account details and credentials
      - Public key for securing messages sent to payee
- Enabling payers to choose how to pay from their available payment schemes that are accepted by the payee
  - Payee does not get to see Payer's payment schemes
- Interaction with payment instrument to authenticate the payer and for the payer to authorise the payment
  - As appropriate to the value and context
- Delivery of proof of payment or description of error to the payee
  - Need to address possible failure modes
- What technical constraints are needed to address regulatory concerns?

Selection Agent for choosing the means of payment

- Should only present choices to the payer which are applicable to the current transaction
  - Requires simple means to determine applicability
    - Matching names of payment schemes, but not a guarantee of compatibility
  - There may be additional fees for particular choices
    - Higher settlement costs, deferred payments, etc.
  - Human readable names and Images for branding of means of payment
- The payer may want to set preferences to pay with a given instrument / scheme in particular circumstances
  - The merchant, amount, currency, time of day, location, etc.
    - Will get even more complicated when we get around to loyalty schemes
  - We don't need to standardise how this happens
    - Nor how to deal with synchronisation across devices
- Payers will prefer a **seamless experience** regardless of which device or browser they are currently using
- Implementation choices and their implications
  - Hosted web app, locally installed web app, native app, browser extension, or integrated as part of the web browser

Implementation Logic

- The payment request API should be independent of how the selection agent is implemented
- Selection agent could replace the merchant's web page
  - Smart phones, or for native or locally hosted web apps
- A web app could be passed an IFRAME for integration within the merchant's web page
  - HTML IFRAME provide security isolation
    - IFRAME is passed with the payment initiation API
- URIs could provide a way to pass info to agent apps
  - Special URI schemes for locally hosted web or native apps
  - A means to pass a message back to originating web page
    - Asynchronous, but not a multi-step conversation
    - Directly via browser and event/callback/promise to originating web page
    - Indirectly via a URI and back-end logic on merchant's side
- Analogy to Android Intents with browser as broker and registrar
  - Browser API for registering and unregistering selection agent

Payment Instrument

Software and hardware used as client for a payment scheme

- Similar implementation choices as for selection agent
  - Browser could play valuable role for invoking instruments
    - Independent implementation choices for selection agents and payment instruments (local web/native or cloud based)
      - Browser keeps these choices hidden from each other
    - Browser or selection agent as registrar for payment instruments?
      - Latter better for seamless experience across browsers
- W3C Strong Authentication WG planned for late 2015
  - Focus on assuring that this is the same device+user as when the user account with the website was originally set up
    - Does ***not*** address binding of Web Identity to Real-World Identity
  - Use cases and requirements for Payments
- Level of assurance required will depend on the payment instrument and the value of the transaction
  - **Low value** may be sufficient to authenticate device
  - **Intermediate value** with biometric, PIN or gesture
  - **High value** requiring additional factors including specific requirements on secure hardware
  - Use cases and requirements for W3C Hardware-based Web Security WG
- Need for standards for conveying details to authentication API
  - And vice versa to provide details on what was used

Beyond V1

Value added Services around Payments

- For businesses and their customers, economic transactions are more than just payments
- Opportunities for addressing pain points and enabling value added services
- Examples
  - Making it easy for for business travellers to submit expense claims
  - Making it easier for people to manage their monthly expenditure
  - Making it easier to support tax audits
  - Avoiding the need for paper when returning faulty goods
  - Avoiding the need to fill out forms on small screens
    - Shipping and Billing addresses
    - Personal information

Receipts

Part of the commercial transaction, and distinct from payment

- Users want track all of their payments without complications of having to go to each of their accounts
- Customers need proper receipts, e.g. in case of disputes, for tax purposes, for corporate expense claims, for value added services and so forth
  - Credit card statements are inadequate for these purposes
  - Emailing customer receipts is a really bad solution
- Information relevant to disputes, e.g. for return of faulty goods
  - Signed by merchant and customer?
  - Machine interpretable plus flexibility for presentation
    - Images and other ways to brand receipts, and present them nicely on a wide range of devices
  - Receipts for payments, for declined payments, and for refunds
- Commercially sensitive so not shared with payment instruments
- Is the agent that holds receipts the same as the selection agent?
  - This would make sense to end users!
  - Most people might think of it as their wallet!
  - Valued added services that you grant access to your receipts
    - Richer machine interpretable data would increase the value of these services

The Bigger Opportunity

- Economic transactions focussing around the transfer of value
  - Purchasing tickets for a concert
    - Digital tickets
  - Paying for a taxi ride
    - Digital receipt I can present to my employer
  - Purchasing a gift card for a birthday present
    - A paper card or a digital card I can send to my daughter
  - Sending a friend flowers
  - Redeeming loyalty points on my Nectar card
    - Loyalty cards supported by a group of participating businesses
  - Paying for my share of a business dinner
    - Painless fast way to pay for what I ordered and to get a receipt
  - Refunding a customer for one part of a purchase
    - Based upon presentation of the original receipt

Where Next?

- W3C Web Payments Working Group will be focused narrowly on moving quickly on minimal standards for web payments
- What about the broader context for payments
  - Push payments, subscriptions, reversals
  - Offline payments, person to person payments
  - Brick & mortar stores and contactless payments
  - Pre-authentication of payer on entry to store, etc.
- What about related standards work on a broader scope?
  - Loyalty cards, prepaid vouchers, discount coupons, tickets, itemized receipts with terms & conditions
  - Connecting Web identities to Real-World identities
- Expanded role for Web Payments IG?
  - What additional stakeholders need to be involved beyond those already present in the Web Payments IG?
    - Tax authorities
    - Value added service providers
    - *Others?*
  - Leading to one or more new Working Groups

Questions?