

Objectives for W3C Work on Web Payments

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1. Introduction

Making payments is already a widely familiar user experience on the web. Further integrating payment capabilities into web *browsers/runtimes* (e.g. via Javascript APIs or markup) or abstracting payment provider systems through *virtual wallets* provides new opportunities to unify/simplify the user and application developer experience. As these opportunities are considered, W3C should also promote an open payment environment in which user choice and integration of existing payment systems are key goals.

2. The User Role in Payment Provider Selection

Users tend to use the tools that are available, “out of the box” or those that are easily integrated through normal app use actions. To allow users to personalize their payment preferences beyond the default, it’s thus important that any abstracted payment system access API (e.g. through a virtual wallet) enable an easy user experience for these capabilities:

- Managing payment services that the user wants to integrate through their virtual wallet, as a provider relationship with a lifecycle (e.g. discovery, selection, configuration, deselection, etc), including selection of the virtual wallet app/service itself
- Integration of device-hosted payment systems/APIs through the virtual wallet, including those present on secure elements installed in or otherwise integrated into the device
- Integration of network/cloud-based payment systems/APIs through the virtual wallet

3. User Authentication and Consent

User authentication and consent will be key enablers of a payment user experience. A web payment system should enable various means for these functions, including multifactor methods that integrate functions of the host device, secure elements, and

trusted execution environments into an overall secure and effective user experience for authorizing payments.

Once users indicate agreement with the a merchant to purchase a product, based upon the selected virtual wallet payment method it may be further necessary to indicate their consent with the financial institution to place the charge on their account. It should be possible for financial institutions to capture this consent directly during the purchase process, rather than just through the merchant or a billing aggregator. This will require support for user interaction flows that involve both merchants and financial institutions.

4. Enabling both B2C and B2B Use Cases

To support enterprise billing/invoicing, web standards need to include B2B (business to business) as well as B2C (business to consumer) use cases. For example, an enterprise wallet through which business payments are transacted should be enabled by web based payment ecosystems.

5. Enabling a Diversity of Payment Types and Amounts

Payment in the abstract is an agreement to a financial transaction, which can vary re payment direction (who is paying who), payment form (e.g. currency, credits of some form, etc), and amount (micropayment, small amount, large amounts, etc). A web payment system should enable such a diversity in form and amount.

These factors can also affect the requirements on the security level necessary to reliably use a payment system, e.g. integration with secure elements, multifactor authentication, and out of band verification. All of these should be enabled by a web payment system.

6. Persistence and Synchronization across Devices

Users are likely to have multiple devices, and want their virtual wallets to be accessible from some or all of those devices, without a lot of overhead to setup and synchronize them. To enable a scalable user experience, a virtual wallet should thus be easily synchronized across the devices that a user chooses.