Digital Verification for Small Businesses

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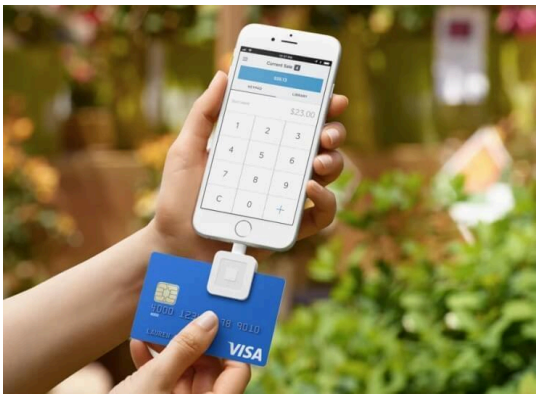
While there has been a large effort to create digital solutions for the identification of people and their financial transactions for at least the past 25 years, users have been slow to adopt any of the proposed solutions. One reason for the slow uptake of digital technologies by normal users could be a result of trying to create digital solutions that solve business needs rather than human needs. To be successful, mobile digital credentials need to be accepted by those places that people visit frequently during their day-to-day activities. It is instructive to look at the places where digital credentials and payments have been successful in order to design the next level of digital products. There appears to be little effort to extrapolate past successes into current proposals.

Over ten years ago a study reported that a large majority of people would prefer to live life without their wallets. While the number of people who are using their digital wallets has grown, the goal of retiring the physical wallet is not realistic in 2024. The US Federal Reserve reports that “overall, 86% of businesses and 74% of consumers said they used faster or instant payments in 2023, and most (74% of businesses and 79% of consumers) reported looking to their financial institution to provide these services.” The adoption of digital technologies for credentials other than payment has been slow, but growing since the adoption by ISO 18013-5 for mobile Driver’s Licenses. As with payments, it is expected that getting the credentials in the hands of users is moving along nicely, the ability to use those credentials in the places where we work and play will prevent the retirement of the physical wallet until most of those stores, health care providers and others in the local community can accept digital credentials.

The adoption of digital payments by small businesses was required to get payments to advance to today's level. It is certainly expected that the same bottleneck will slow down the retirement of physical wallets.



Square started as just that, a square reader that could be plugged into most cell phones to turn them into a smart card reader. A fully functional square reader is available on Amazon for $278 on 2024-05-08. It can ring up sales, accept payments, and print receipts. The cost of equipping a large restaurant with Point-of-Sale terminals for all service personnel can be staggeringly large. Of course, there is both a monthly and a transaction fee as well.

The Goal of a Wallet

The current physical wallet allows a user to respond to a request for information by selecting a physical card from the wallet and either displaying that card to the verifier or by scanning some of the information on the card in digital format. The one downside to this method is that all of the information on the card is visible to the verifier. One upside to this method is that the user knows the physical context of the request, where they are and who is asking for the data. Typically the user also knows why, for example the state requires the user to be a certain age to access the materials controlled by the verifier.

The current methods for getting information from a digital credential are less informative as the name of the verifier or the purpose for the request is not articulated. In short, the request for information is not user-friendly. If this defect is not corrected it seems that the user of the fully digital interchange will be at a disadvantage when compared to the current methods. This will lead to unhappy user outcomes and abandonment of the digital credential option completely

Another defect to the proposed methods is that they are only available to people owning and capable of using a smartphone. This is not an inclusive solution as it will exclude some people from access to the rights and privileges that the rest of the population can access. Some means of providing digital access to all members of the community is required to meet the basic goals of statements like the UN statement on minimal human rights.

Only one Use Case is of any interest.

The service person adds the requests of the consumer, the bill-of-material, into the Point-of-Sale device. The consumer approaches the Point-of-Sale device with their phone and taps the device. Data is exchanged, and the user is given a screen that describes the Verifier and the purpose in terms that they can understand. The user makes a gesture of acceptance and the two devices exchange data, and the transaction completes to the satisfaction of each. If there is some other data, like “over-18” that is needed, it is done.

Around the world, merchants large and small have adopted digital wallet payments, but many are now happy with the status quo and not particularly interested in stepping up their tech efforts with this payment method.
https://www.pymnts.com/mobile-wallets/2023/merchants-accept-digital-wallets-will-not-invest-innovation/

Potential Applications

1. Using proof-of-employment documents to acquire safety-net services, like health insurance or other available benefits. The holder needs to provide proof of identity and proof of employment records to show evidence of eligibility. The service can be delivered directly to the subject or via a ticket downloaded to the phone to give access to the service at a physical location.
2. Applications for employment with specific documents are needed depending on the jurisdiction. This can be an I9 or work visa like H2A or H2B. This can occur in the field for migrant workers. There may be more than one worker with credentials on a single smartphone.
3. The Verifier is a mobile delivery person who may not be a full-time employee and needs to assure of the age or Identifier of the recipient of the package.

What is Behind this Simple UX?

Clearly the user is in a place where a secure transaction is required to complete the user's access to whatever resource or material that they desire. This means that the user may need to supply some attributes, like over-18 and the funds or other access tokens that are needed to complete the transaction. The user needs to trust that the verifier receiving the data and the funds is the one that they recognize as trustworthy, there will be some sort of trust mark associated with the transaction from the verifier, perhaps on the user's device screen, but certainly as a part of the receipt or log that is available to them on their device (probably their smartphone). The verifier trusts that the credentials issued with the attributes needed will satisfy their legal obligations to verify the requirements of law or due diligence. Both are satisfied that the transaction met their needs.

The current trajectory of wallet technology seems to be leading to multiple wallets in a holder's smartphone. Should this continue it would be best for the holder if the smartphone could get a request for multiple purposes (say age and payment) and forward each to the appropriate wallet and combine the wallet responses into a single response to be returned to the holder. Today there are two organizations creating payment protocols, W3C for web payments and EMVco for in-person payments.

Also, today if a payment processor is handling the merchant (verifier) request, they may modify the merchant name with a prefix indicating the processor as well as the merchant.

Here is an example of the sort of protocol, which we call the Purpose Consent Query (PCQ), that will permit such a successful transaction. This PCQ is designed to send a

smartphone sufficient information to determine how to handle the query for personal information in a way that the holder can fully and quickly understand.

Purpose Consent Query 2.docx

What needs to Happen?

A consortium of issuers, providers, and verifiers needs to agree on an approach and run some tests to be sure that the proposal is sound.

A receipt will be issued in a human-readable form like a text, email, or other message at or before data is sent to the verifier..

Obama phones designed to make phone available to all, but may be infected with malware

Use case for an underserved individual to get a smartphone that will provide the necessary features with an example at (eg. Target).

Link to California open source for using a phone as a merchant terminal. *OpenCred* - only supports QR codes and not BLE as of 2024-06

Open hardware should be made available for solutions to be provided to small businesses and service providers wherever they may be to be accessible to the people who need them. using radios as needed: NFC for payments, BLE for richer solutions.

Getting a phone and SIM card with access to a phone network. Some sort of email or other notification mechanism will be needed to use the phone on many phone services.

Payments are an obvious starting point as they have been very successful, but only after several years of building up support for small businesses by Apple.

Use Cases

Use case for an underserved individual to get a smartphone that will provide the necessary features with an example at (eg. Target).

Since identity has not been shown to be popular with the people to date other services might include:

1. Proof of age
2. Proof of CA driver's license - for auto rental
3. Proof of employability
4. License to use public facilities

5. Access to health records
6. Registering a child for school
7. Utility bills, Property deeds or other proof of residence
8. Login services to any online services that support SSO.