The Evolving Internet: Microtransactions for web3 President!

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When the Internet first came into being, it was probably hard to imagine how this nascent technology would eventually become deeply ingrained in nearly every aspect of our personal lives and business interactions. It's a fun trip down memory lane to look at headlines from the mid-90's to see how many popular news publications were describing the internet and the guesses on how it would turn out. There's one article from a leading magazine at the time that noted how no computer network will replace your daily newspaper, book, or music...whoops! Today, it would be truly difficult to live or work without the internet.

As the Internet has continued to evolve, so too has the economic model that underpins how monetization and business growth are achieved. At the very infancy of the Web, two models were debated – an ad-supported model and a microtransaction-supported model.

When the foundation of the modern internet was established, formal search engines, as we know them today did not yet exist. This meant the only way to find websites was through aggregated lists of links, which were cultivated carefully by the pioneers of the internet era. This led early

designers to contemplate whether future monetization of the Web should be through ads on those sites that received the most traffic, or through a microtransaction generated every time someone clicked a link, thus delivering a payment to that website.

To serve ads or not to serve ads, that is the question

At the time, the monetization of the Internet was a distant concept, but the leads of web development at the time recognized the backbone that was being put in place would have to support this future evolution. Microtransactions were not viable in the late 1980's, so it's not surprising the ad-supported model won out. However, the remnants of both approaches can still be found in the early foundational source code. One of the most common error messages one can encounter is — "Error 404, link not found" — which indicates a web page that no longer exists. There is another code, 'Error 402, payment required' that is also embedded in the code, which would have indicated that a microtransaction was needed. This can be seen as evidence that the founders of the modern web were preparing for the eventual advent of microtransactions.

Today's discussions around the evolution of the Web and microtransactions is definitely not a new one, but instead a reemergence of the original debate. The ongoing development of web3 provides an opportunity to pursue alternative payment models, which are taking on greater importance during a time when data leaks and cybertheft is occurring all too frequently.

The widespread harvesting of personal data in today's ad-supported universe has had the unintended consequence of exposing personal information, which can lead to identify theft. This has led to new privacy and protection regulations, such as the General Data Protection Regulation (GDPR) in Europe, and the California Consumer Privacy Act (CCPA), which went into effect on January 1, 2020, as well as the California Privacy Rights Act of 2020 (CPRA), that goes into effect on January 1, 2023, but covers all personal information collected on or after January 1, 2022.

All of this points to a shifting cultural focus on protecting data, making sure it is clear where personal data is going and how it will be used. It also opens the door to the potentially safer microtransaction-supported model, which does not require the collection of personal data.

We need roads before cars can drive on them

The concept behind the microtransaction is certainly appealing, but the infrastructure to make it work is not yet in place. The problem lies in the small size of the transactions, which may be fractions of a penny per interaction with a website. Currently, there is no way to cost-effectively move money from point A to point B for a value of a few cents. Using a credit card would cost 30-times the original value to send the transaction. Sending payment via ACH would cost anywhere between five and 10 times the value of the transaction. And in the case of cross-border payments, the costs would be even greater.

The high cost of existing payment options suggests that better ways to manage microtransactions will have to be established. Solving the problem of payment execution will be key. Many envision that cryptocurrency will be the answer. And there is a case to be made for crypto serving a role in the execution of microtransactions, but when the actual cost of mining and posting to blockchain is factored in, the computational and energy costs end up being greater than that of existing fiat currency. There are exciting technologies being worked on in crypto to address these current shortcomings and our best chance for progress is to pull the best ideas and technologies, regardless of where they originate from: fiat or crypto.

The need for speed

In all likelihood, whatever form the execution of microtransactions take on web3, it probably will involve instant payments, also known as real-time or faster payments. Fiat currencies are now being executed near-instantly in many countries around the world. This can happen through traditional clearing systems that banks connect to, via card networks, or through a variety of other schemes.

As the details of the microtransaction-supported model are expected to be worked out in the years to come, bank-led clearing systems will almost certainly play an important part in the payment execution mix. Interestingly, banks are already providing back-end services for Fintechs and payment service providers favored by the product and engineering teams at some of the leading payment service providers, Fintechs, and Tech companies. As web3 continues its evolution, finding a way to execute microtransactions cost-effectively could prompt product and engineering teams to look beyond Fintechs and services providers, who charge a markup, and go directly to banks — cutting out the middleman. Banks are well-positioned to offer a better solution for things such as instant payments, from an operational and value perspective.

Being able to access instant payment programs at scale and with a low cost-per-payment will be an important step toward a viable web3 microtransaction-supported model. This new model could enable many of our clients to imagine new products and use cases that take advantage of the increased speed and reduced cost of payments. At Citi, we have been investing in our instant payment suite of services that are available in over 60 countries (and growing), both via local accounts and through our WorldLink Payment Services, a complete global transaction solution that enables making cross-border payments in more than 135 currencies without the need to maintain local currency accounts. Tools, such as these, can be a foundational element of the future microtransaction model and the conversations with our clients about the future use cases of these tools have been nothing short of inspiring.

The future…a multi-model internet?

web3 is predicted to offer users the choice of both payment models. Some internet users may choose the ad-supported model so that services can be free, and for some it may not be a choice since they may lack the means to pay for internet services. Others may gladly make micropayments for access, thus helping to ensure their data in no longer harvested without their permission and used for economic purposes beyond their control. We should continue to enable payment models that provide customers as many choices as possible to define what is best for them. And as usual, whatever forms of payment eventually emerge as the key to cost-effective web3 microtransactions, they will assuredly be ubiquitous and offer a range of choices that can help meet user preferences.

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