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NEW FRONTIERS OF FINANCIAL SERVICES WITH WEB 3.0



An Infosys Consulting Perspective

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Introduction

Web 3.0 (or Web3) is accelerating as the underlying technologies mature, including the superfast 5G internet on horizon, light open-source software, spectacular advancements in artificial intelligence (AI), machine learning (ML), Internet of Things (IoT) and expanding capabilities of distributed ledger technologies. It is the right time for the financial services industry to relook at this thought-provoking concept and assess its impact and undertake preparation.

Web3 means a lot of different things. A widely accepted definition does not exist as little academic research has been conducted on this subject. However open, trustless and permissionless are considered the three fundamental tenets of this technology¹. The aim of this point-of-view is not to discuss the underlying technologies of Web3 in detail, but rather to explore the potential impact of Web3 on the financial services industry.

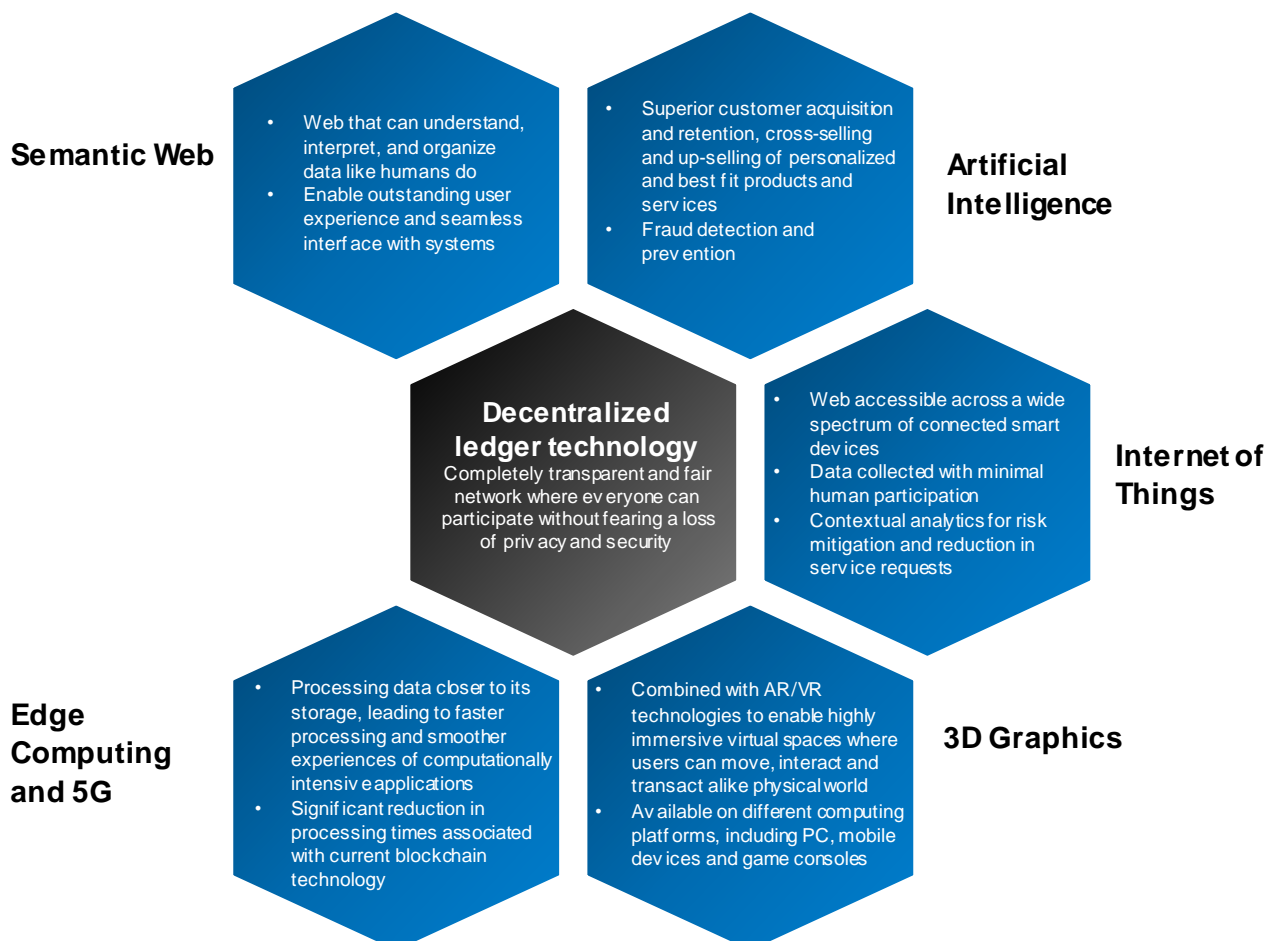


Evolution of the Web

Web 1.0 is the first generation of web that lasted from about 1991 to 2004. Web 1.0 worked as an information medium for businesses to broadcast their content to people, such as IMDB. Content creators were few in Web 1.0 and most users simply acted as content consumers. User interactions were limited, and websites only allowed searching and reading information.

2003-04 saw the introduction of “Web 2.0” coined by Dale Dougherty. Against the “read only” nature of previous generation, Web 2.0 is characterized as “read-write” web. It enabled user-generated content, usability, and interoperability for end users. Web 2.0 is also known as the wisdom web, people-centric web, and participative web². With technologies like AJAX, flash, HTML5 and the advent of web applications on mobile devices, the user experience leapfrogged in Web 2.0. However, this era also witnessed increasing centralization of the web with giants like Google, Microsoft, Amazon, Facebook, Apple etc., along with mindless selling of personal data, hyper-targeted advertising, biased traffic, rigged review and rating systems.

John Markoff of the New York Times suggested Web3 as third generation of the web in 2006. Web3 is also referred to as semantic web which was introduced by Tim Berners-Lee, the inventor of the web, however Web3 is expected to be more than just that. Web3 is not a separate or isolated technology, but rather a compilation of already existing principles amalgamated with new programs and scripts³. Some of the key technologies set to power Web3 are:

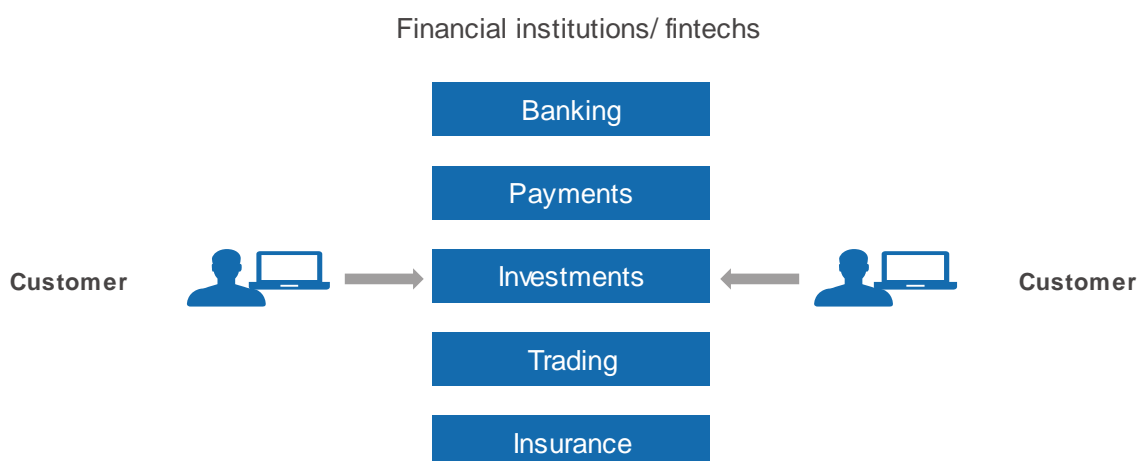


In Web3, there will be a strong convergence of the decentralized ethos of Web 1.0 with the advanced modern functionality of Web 2.0. This means AI powered hyper-personalized experiences, higher user participation (active and passive put together), newer forms of interactions, newer formats of content, but without centralized control. Users will not need any permission from a “central authority” to publish anything, there is no control node, no single point of failure, and... no kill switch to shut it all down if necessary⁴.

Financial Services in Web 2.0

On the back of user interactivity offered by Web 2.0, financial services evolved to become **digitized, online and self-serviced**. Internet banking became ubiquitous, evolving further into mobile banking. From relatively simpler offerings of opening accounts, raising service requests to relatively complex offerings like cross-border payments, instant loans, and investments, everything became digitized, online and self-serviced to some degree. Today, an entire maturity spectrum of these megatrends exists and organizations as well as nations can be mapped on this spectrum. At macro level, this maturity is influenced by several factors including economic development, technology availability and adaptability, internet proliferation, human capital, sociological and cultural factors. At firm level, over and above macro factors, maturity is driven by organizational and technological agility and most importantly by ambition. Fintechs and neo banks are at the extreme right of this spectrum with their disruptive offerings.

Web 2.0 put the power in the hands of customers and hence customer centricity became the key imperative of business strategies in Web 2.0. Businesses geared all the transformation efforts towards making the lives of customers easier and thereby capturing their mind and wallet share. Customer behavior also underwent change, with customers becoming increasingly tech savvy and craving more and smoother online experiences. Eight in 10 U.S. households (86 million households) with internet access now use online banking, with incremental growth continuing each year. Online banking usage is high, with customers accessing accounts through online banking an average of 10 times per month⁵. In the US, banks have already reduced staff – from 13 FTE per branch in 2004, to an average of less than 6 today⁶. The global online banking market size was valued at \$11.43 billion in 2019 and is projected to reach \$31.81 billion by 2027, growing at a CAGR of 13.6% from 2020 to 2027⁷.

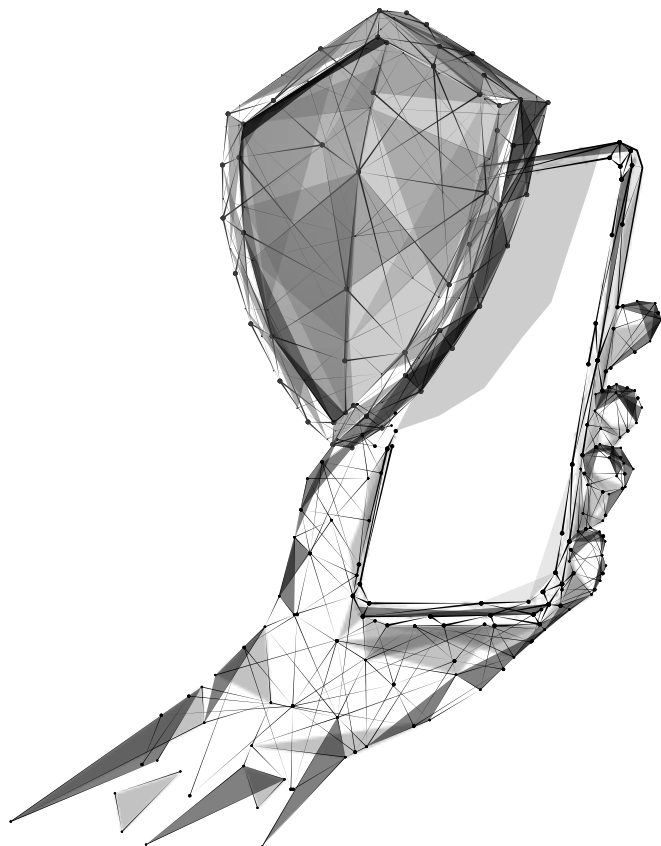


Financial Services in Web 2.0

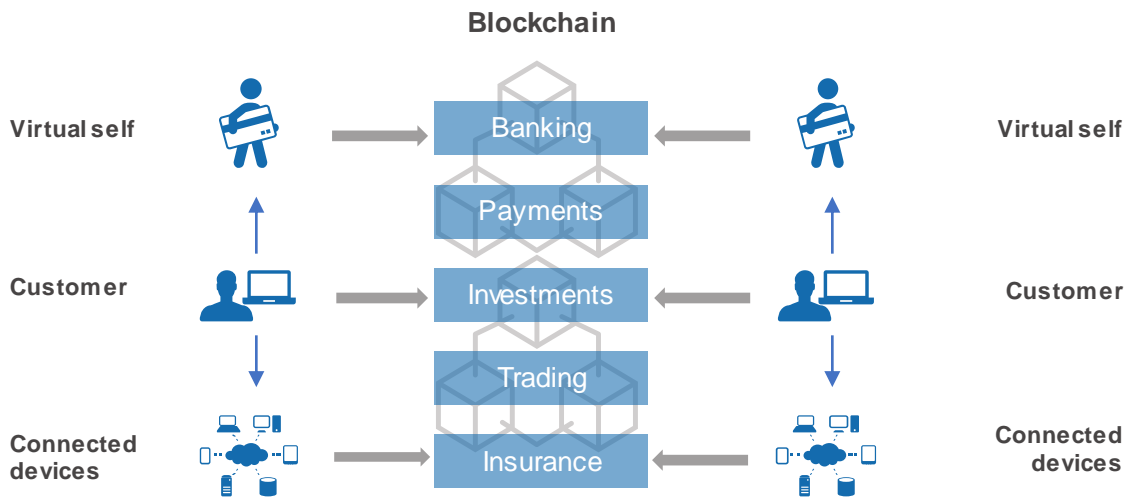
Financial Services in Web3

Web3 will launch customer centricity and customer empowerment into hyperdrive. Increased autonomy will reside with the customers. The current web architecture differentiates between providers and users but the new architecture may lack a rigid division between them. Today, when we connect to Facebook, we are users, and Facebook acts as a provider, giving a free service in exchange for personal data, keeping the privilege to modify terms and conditions at any moment. Web3 is going to remove this distinction so that users can both use and deliver the service by operating a node, making disintermediation possible. A centralized entity like Facebook may no longer be required. The feed's visibility algorithms — that are today the intellectual property of the social network companies— will be replaced by public smart contracts⁸.

An alternative financial services ecosystem is expected to emerge, without the presence of intermediaries i.e. any type of financial institution. Decentralized finance, or DeFi, is a system by which financial products become available on a public decentralized blockchain network which makes them open to use by everyone. Customers need not go through intermediaries like banks or brokerages and therefore there is no need of a bank or a brokerage account, government issued IDs, social security number or address proofs. It is understood that DeFi is not a new concept, but in Web3 it is expected to become mainstream.

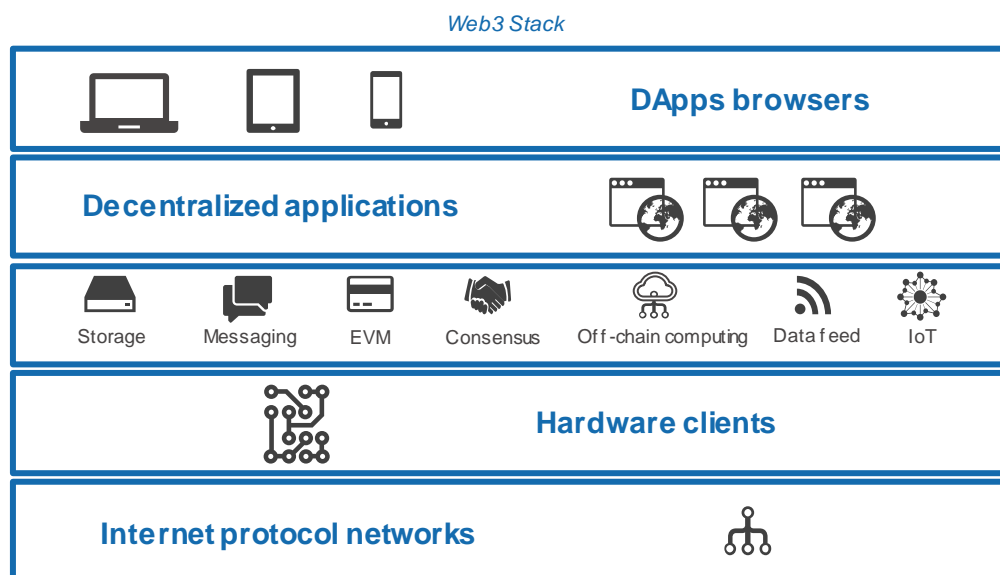


Financial Services in Web3



Interestingly, the persona of the customer might also expand to include a virtual self or an avatar. With Facebook’s announced intention of building a metaverse and renaming itself Meta⁹, this doesn’t seem far-fetched. Venture capitalist Matthew Ball described one of the characteristics of metaverse a fully functioning economy where individuals and businesses will be able to create, own, invest, sell, and be rewarded for an incredibly wide range of “work” that produces “value” that is recognized by others¹⁰. Another dimension of persona’s expansion will be IoT devices communicating and sharing data, like a car collecting information on driving habits of the driver and sharing that with insurance firm to fine tune the premium amount. All these put together will transform an ordinary web user into a multi-dimensional user, interacting with web in previously unthought-out ways.

The core enabling technologies of DeFi are blockchain and digital currency, powered by decentralized apps called “DApps”. DApps differ from conventional apps in features like they have zero downtime, can’t be shut by anyone since they don’t work on centrally controlled code and are more secure since data is immutable. They safeguard user privacy as users don’t need to submit their personal information to use data, rather they use ‘smart contracts’ to enable transactions between parties¹¹.



Concept Use Cases of Web3

The use cases in Web3 are expected to revolve around DAOs, decentralized autonomous organizations, which are member-owned communities on blockchain without centralized control or leadership and managed through smart contracts.

- **'DeBank' accounts:** Banking accounts opened on blockchain with banking DAOs and maintained with smart contracts. Interoperability between various banking DAOs, enabling P2P transactions.
- **True P2P lending:** Direct lending between individuals, managed on blockchain with smart contracts, without any fintech or commercial bank in the middle.
- **Open insurance:** Communities pooling together funds to share risks, performance linked premiums with help of connected devices, claim registration, auto verification with data collected from connected devices, settlement using smart contracts.
- **Open credit cards:** Fully tokenized virtual credit cards, issued and maintained on blockchain with transaction settlement, billing, repayment, and loyalty rewards through smart contracts.
- **De-centralized currency exchanges:** Blockchain based exchanges with users participating in P2P exchange of digital currencies with minimal fee through simple, mobile based interfaces.
- **Investment marketplace:** Groups of various DAOs with different investments focus coming together on the same platform, with users participating in DAO of choice to pool money and invest in specific assets.
- **Customer 720:** Further building upon customer 360 by collecting data from extended user persona touchpoints and applying semantics to build super-rich user profiles in automated manner.
- **Smart compliance:** Cloud platforms with semantics and ML automatically reading and learning from regulations, detect correlations, track and monitor regulatory changes as they appear and auto-update smart contracts.

Final Thoughts

Web3 is still work-in-progress, but it is generating enough clamour to catch attention. In addition to fintechs, major financial institutions are beginning to take notice and dip their toes in it. HSBC and Wells Fargo are experimenting with Web3 to settle foreign currency trades¹². Standard Chartered's SC Ventures announced a partnership with Hong Kong-listed BC Technology Group to launch a digital asset brokerage and exchange¹³. Spanish bank BBVA launched blockchain corporate lending platform and encouraged its clients to host their own blockchain nodes¹⁴.

Financial institutions need to acquire knowledge about Web3 technology, the opportunities and risks arising from the same and start preparing for the changes - otherwise they may be unable to capitalize on emerging trends or even worse, retain customers. Web3 applications are blockchain native and presently require computing horsepower and some technical prowess on users' part as well. A critical factor for mass proliferation of Web3 would be making it mobile, making its apps with simple, intuitive, and frictionless mobile interfaces, which an average user can handle.

Even though Web3 has started becoming a boardroom discussion and an active experimentation ground by both fintechs and traditional financial institutions, how exactly it will transform financial services and our lives in general is yet to be seen. Umar Farooq of JPMC Onyx rightly said that with Web3, we are in the Napster stage of music, and one day there will be Spotify and Apple Music and we probably can't even see that far right now¹⁵.

Meet the Experts



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