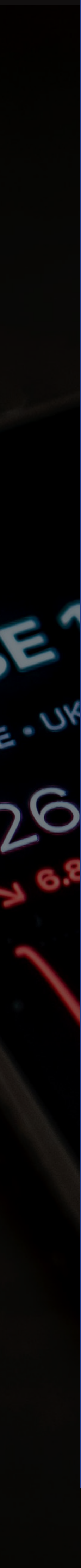


Truffle Capital

Super App Race

Cryptocurrency as a Potential Hook Product

September 2022

01

Introduction

A Super App is a single application that enables a consumer to access multiple products in an integrated fashion, providing greater value than the consumer would achieve by going to individual apps for each product instead.

The trend of Super Apps originated in China when WeChat Pay and Alipay – the mobile payment apps for Tencent and Alibaba respectively – started integrating payment (in store and online), daily life services (food order, ride hailing, ticket booking etc.) and wealth management (investment, insurance, credit access, etc.) into a single and easy-to-use interface which satisfies most of the daily transaction needs for consumers and enables them to go cardless.

Following the lead of WeChat Pay and Alipay, Super Apps are now emerging around the world. In Europe, fintech giants such as Revolut, Klarna and Lydia have made substantial progress in gaining prime position in the competitive landscape. For example, starting with a flagship travel bank card with zero-fee international money exchange, Revolut has steadily announced new initiatives that demonstrate its ambition to "build the first truly global Super App". In 2021, Revolut partnered with Chubb in a move that diversifies its insurance offer to include individual cyber-insurance. It also launched Stays, a feature that allows users to book hotels directly in the app, and On Demand Pay, a feature enabling employees to receive their accrued salaries in advance.

Similar to Revolut, players starting from different original offers are converging on a combination of savings, money transfer, credit lending, insurance and some other key financial services needed by mainstream consumers. The value propositions could be achieved via multiple paths, but an initial "hook" product is essential to attract and retain a large customer base. Additionally, a payment infrastructure is key, operating as the bedrock to connect all the services.

VALUE PROPOSITIONS

- Superior overall user experience, customer-centric, sticky
- Compelling single view of multiple products, consolidated data to multiply value back to consumers
- Unique loyalty offers / rewards to incentivize the consumer to consolidate their products in the app
- Offer product discounts to confirm to consumers that they are getting the best deal

COMPETITIVE ADVANTAGES

- Stickiness / lock-in
- Hyper-personalization
- Superior value
- Lower price points
- Easier cross-selling(~zero marginal CAC)

LARGE AND ENGAGED CUSTOMER BASE + INITIAL "HOOK" PRODUCT + PAYMENT IS THE LIFE-BLOOD

Source: FT Partners

02

Business Models

The business model of Super Apps is built on the philosophy that separate functions and features in the financial services market need to be turned into a connected ecosystem where the platform would streamline and control all data and information. Therefore, the company could cross-sell every incremental product to its existing customers at approaching zero customer acquisition cost.

Currently, the business models of large Super App contenders can be mainly categorized into three types: Winner-Take-All, Over the Top and Hybrid[1].

WINNER-TAKE-ALL **OWN APPS**	ADVANTAGES AGGREGATION – OVER THE TOP **3RD PARTY APPS**	ADVANTAGES AGGREGATION – HYBRID **OWN + 3RD PARTY APPS**
• Build devoted customer base with banking or other consumer financial services • Expand to add more products, aiming to become their users' primary financial relationship	• Create digital experience layers / marketplaces to connect users to existing ecosystem of digital banking and financial services • Largely a tech-only approach	• Start with large customer base for existing product (financial or non-financial) • Connect customers to third party offerings as well as developing in-house products
Revolut, chime, MoneyLion, Square, SoFi, monzo, robinhood	CURVE, Rappi	Alipay, WeChat Pay, gojek, Grab, Apple, Google

Source: FT Partners

ADVANTAGES

- High retention and life time value for existing users
- Robust data access, comprehensive overview of customer behavior, more accurate cross sell and upsell focus

CHALLENGES

- Have to persuade retail consumers to switch their primary financial services to the Super App
- Need to build financial products in house, with associated high costs

ADVANTAGES

- Aggregation players have a customer acquisition advantage as the users may come for a variety of financial or non-financial products
- Easier to scale up with the plug-play 3rd party partners
- Does not require end users to switch from traditional banks

CHALLENGES

- Need a strong "hook" product to build engaged customer base
- Over-the-top players can face resistance from legacy providers that do not want to participate in their ecosystem
- Hybrid players can lead to inherent conflict between being a discovery platform and prioritizing owned products

1 - References: FT Partners

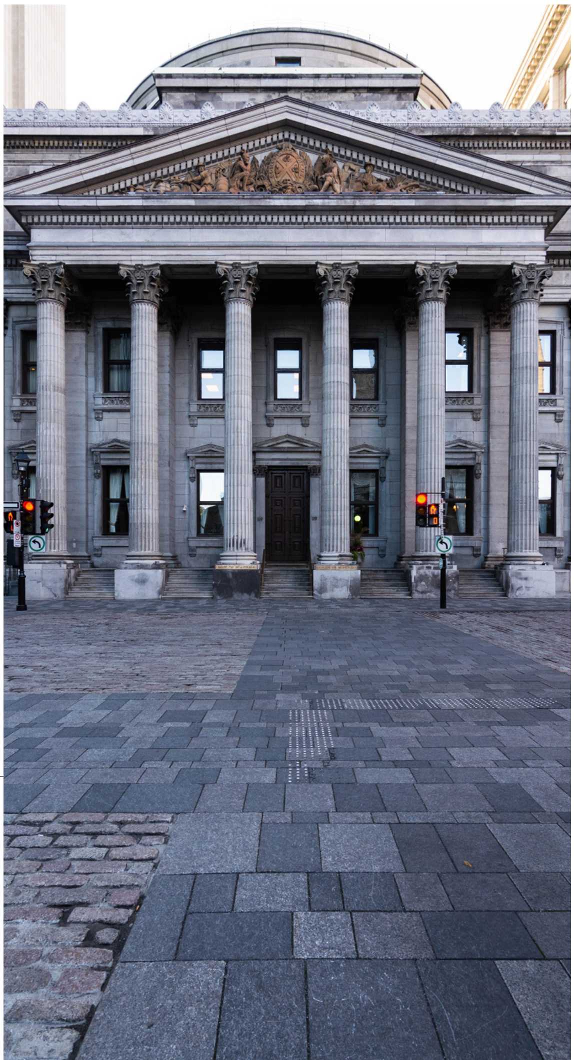
03

Positions of Traditional Banks

Super Apps offer a simple user interface to access comprehensive financial and non-financial services. For traditional banks, it means that more and more users may bypass banking apps and simply use the more integrated Super Apps. The digital payment features would also reduce consumer reliance on cash and credit cards for daily expenditures.

Some banks have already become part of the Super App ecosystem by providing embedded "Banking-as a-Service" to the apps, extending their reach through partnerships and collaborations with Fintechs to remain relevant and competitive. As the financial regulations can very rigorous especially when it comes to internationalization, many Super App players prefer to collaborate with traditional financial institutions to provide financial products such as loans, insurance and so on. This creates revenue-generating opportunities for banks. Some of them offer white-label services in the background and some go further to leverage their brands, using the platform to create a smoother and more convenient user experience. However, since the number of Super Apps is limited, banks will need to act quickly or risk having no one left to partner with[2].

To better secure market share and competitive advantage, banks can also consider competing directly with challengers and build Super Apps on their own. A Hybrid approach could be an appropriate choice for incumbents, which means they not only offer their products on other marketplaces but also offer third party products to their own customers. This approach could enable banks to improve their data management and analytics capabilities and share it across various service areas and lines of business to develop a better view of the target audience. Furthermore, Super Apps allow banks to shift their focus from simply conducting transactions towards building longer-term relationships that lead to higher rates of customer acquisition, satisfaction and subsequently, stronger brand loyalty.



2 - References: Accenture

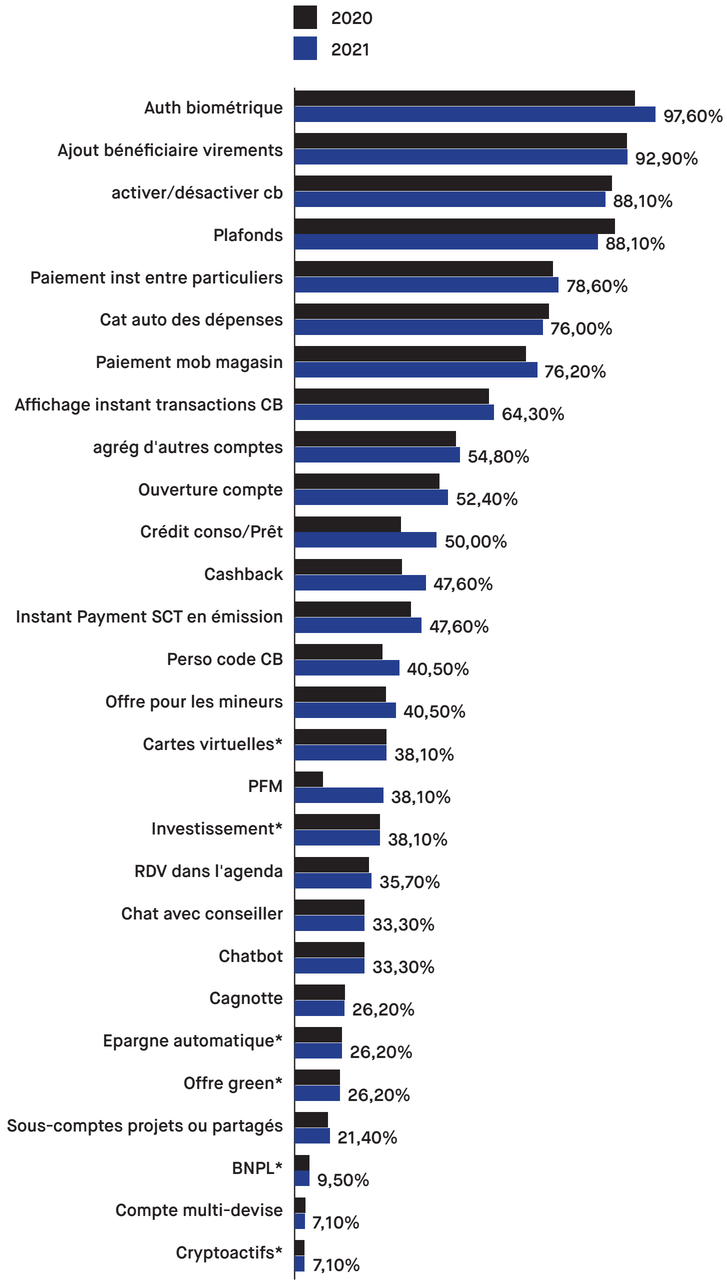
04

What Could be a "Hook" Product?

In order to attract affluent users while leveraging the existing customer base, banks need to identify a strong hook product as a first step on the path towards building a Super App.

Recent research published by MindFintech studying 15 traditional banks, 7 online banks and 20 neobanks, identified 28 functionalities present in mobile applications of traditional and challenger banks active in France in 2021. The following graph shows which features are found most frequently, and which have seen the most growth in adoption in mobile apps over the last year from 2020 to 2021.

As shown in the graph, the traditional features such as payment, transfers, and automatic categorization of expenses are offered by most of the banks. Although these offers are regarded as essentialprerequisites for customer retention, they are not the best choice as hook products since they bring limited differentiation and customer acquisition power. More innovative offers including BNPL (Buy now pay later), apps to increase purchasing power, and cryptocurrencies could be better candidates. As these services represent growing markets with limited competition from other incumbents, pioneering banks willing to make the leap could stand out and take the lead.



Source: MindFintech

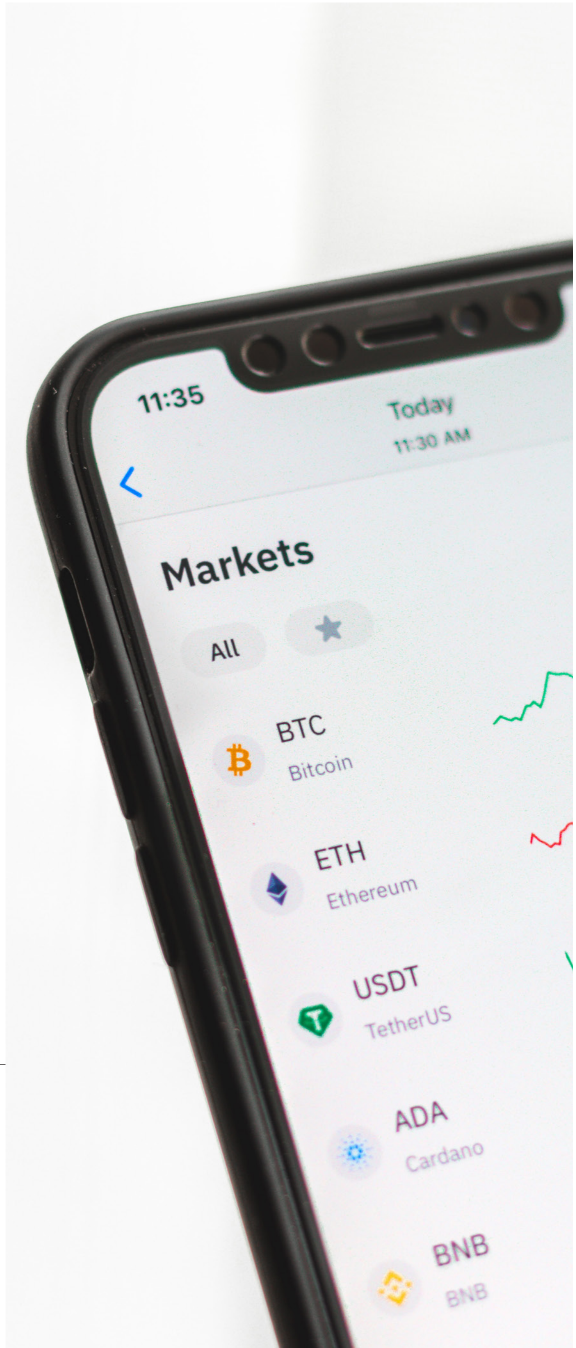
05

Cryptocurrency as a Hook Product

With a record market capitalization of $3 trillion in 2021[3], the crypto market is becoming a significant investment sector which cannot be ignored.

Top banks / neobanks / insurance / asset management companies have explored direct engagement such as setting up crypto trading desks or indirect engagement such as investment in startups. But whilst traditional incumbents tend to focus on institutions or selected high-net-worth clients, challengers and tech giants have already rolled out to mass retail customers.

To compete with challengers, banks must stay innovative and open to retail customers. Those who act quickly would gain more retail customers before the market gets crowded.



3 - References: The Block

MORGAN STANLEY	1. Announced access to three funds that provides bitcoin exposures for HNW clients; 2. Invested in bitcoin company NYDIG; 3. Invested in Web3 infrastructure company Figment
GOLDMAN SACHS	1. Restarted cryptocurrency desks; 2. Started bitcoin derivatives trades; 3. Invested in crypto data company Coin Metrics; 4. Invested in crypto trading infrastructure company Elwood Technologies; 5. Invested in digital asset infrastructure company Anchorage Digital
BNY MELLON	1. Invested in crypto custody company Fireblocks; 2. Invested in crypto trading infrastructure company Talos; 3. Invested in crypto data company Coin Metrics
COMMONWEALTH BANK	1. Invested in crypto exchange and custodian company Gemini
CITI BANK	1. Invested in crypto compliance & risk management company TRMLabs; 2. Invested in crypto market & blockchain API company Amberdata; 3. Launched a new digital assets group to help invest in cryptocurrencies
STATE STREET	1. Launched its new digital finance division which encompass cryptocurrency and blockchain activities; 2. Partnered with Lukka to provide crypto services to private-fund clients
WELLS FARGO	1. Invested in crypto trading infrastructure company Talos; 2. Invested in blockchain analytics & crypto compliance company Elliptic
BBVA	1. Launched bitcoin trading and custody services in Switzerland
AXA	1. Allows payment of bills in crypto
REVOLUT	1. Added crypto trading feature in mobile app
N26	1. Plans to add crypto feature later 2022
VISA	1. Partners with BlockFi to release the Bitcoin Rewards Credit Card; 2. Launched a VIP crypto card which allows members to convert their bitcoin as well as other major cryptos into spendable cash
PAYPAL	1. Launched cryptocurrency buy, sell and hold features in the app; 2. Allows the users to make payments with cryptos ; 3. Acquired Curv, a crypto custody company

Source : Blockdata

The crypto market is immense and there are different actors and layers inside the ecosystem. When it comes to retail users, the pain points usually start with the knowledge barrier. Except for the frequent traders who are active on exchanges, many individuals don't have adequate knowledge on cryptocurrencies. They want to follow the trend, but they find it difficult to create their wallets, or when they want to make investments, there is a lack of readily available professional advice.

The aim of creating a Super App with crypto as a hook product is to allow the mass market to engage in the digital asset world even with limited knowledge and budget. Among the diverse offerings, we have identified 4 type of services which we think would be attractive to retail users from all backgrounds.

1. Trading
Directly purchase and sell cryptos inside the Super App with fiat currency in the account.

2. Payment
Settle daily expenditures with cryptos. Banks could build partnerships with merchants who are willing to accept cryptos or fiat directly exchanged from cryptos. The merchants can price their goods in either fiat currency or cryptos, and the customers pay only with cryptos. If the selected payment currency is different from the pricing currency, a conversion will be done automatically on the customers' end. The conversion rate will be based on the market rate at the time of payment. When customers make a payment, they can choose to do so either via the app or via a crypto credit card issued by the bank.

3. Investment advisory & asset management
Instead of investing in individual coins, customers could invest in pre-set portfolios based on their risk appetite. The portfolio could also be adjusted according to customers' changing requirements and risk profile.

4. Staking
Allows customers to hold funds in a crypto pool and earn a percentage of rewards.

A nank's existing large client base would fuel customer acquisition for these 4 features, and these features also bring synergies to the core banking products.

SYNERGIES WITH CORE BANK PRODUCTS			
CURRENT ACCOUNT	LOANS	INVESTMENT	PAYMENT
Data monetization: all the transactions would pass by the current account, and the data generated would be useful for the decision making and assessment of individual clients' investment behavior	No direct synergies. The price volatility of cryptos bring risks to the investors and large potential downturn impact on the financier if investors take credits.	Enrich the offerings of banks; create upsell opportunities for other products such as insurance.	Crypto payment feature would bring flows, and the associated data information could help banks better analyze users' behavior and make more accurate proposals for upsells such as loans.

	ARPU[4]	GROSS MARGIN %	USER BASE POTENTIAL%
Trading	€72 - 120	Low	80%
Payment	€6 - 12	Medium	40%
Investment Advisory & Asset Management	€180 – 200	High	50%
Staking	€50 - 62	High	30%

	BANK CUSTOMER RETENTION
Trading	Crypto trading features would help banks increase retention rate since the clients would benefit from the convenience of direct purchase of cryptos via daily used current accounts without the complication of transferring and funding a sperate account.
Payment	Increase customer retention. For SME clients (offline merchants & e-commerce): lower fees compare to debit/credit cards; For retail clients: international cross-border free.
Investment Advisory & Asset Management	Clients who choose to invest in portfolio instead of individual coins generally will switch platforms less frequently, which would increase the customer retention rate for banks.
Staking	Staking normally requires a vesting period, which discourage clients to switch platform frequently.

4 - Calculations refer to market average pricing and business models of leading companies such as Crypto.com, Revolut, Coinhouse, eToro, etc.

06

Execution Challenges

TECHNOLOGY[5]

KYC, KYT & KYD

Verification has long been an issue for cryptocurrencies because of the standard way that banks establish trustworthiness. When they bring a new client onboard, they rely on KYC (Know Your Customer) verification. But KYC is a check only on the customers and not on the transaction, so it may not detect all cases of counterfeiting and money laundering. Therefore, KYT (Know Your Transaction) is critical to add complementarily, which is enabled by blockchain technology and can be used to easily track almost all transactions back to their sources. In addition, the KYT process can include analytics that recognize patterns of behaviors associated in the past with criminal activity and set off alarm bells when those patterns occur. Moreover, banks could also conduct KYD (Know Your Data) to further analyze the sources of transaction records and to validate data from cryptocurrencies where some transactions are not automatically traced. For KYC + KYT + KYD approach to work, banks need to raise their internal capabilities.

From the technical side, it requires functions that include connectivity and analytics of the large volumes of data collected. And it also requires banks to integrate the new technology into their established systems without compromising them.

CUSTODY

Neobanks and small exchanges use third party custodian services for storage and protection. For larger institutions like banks, the counterparty and / or balance sheet risk of a third-party custodian may be too great. They may also have investment strategies that may be ineffective if combined with third party custody. Therefore, self-custody sophistication is significant for banks. In addition, in order to launch more demanding services and products, custody as a foundational layer is playing a more and more important role. Top digital asset players have greatly invested in startups that provide technologies enabling clients to build their self-custody infrastructure. For example, BNY Mellon and SVB invested in Fireblocks, Paypal acquired Curv and Galaxy Digital acquired BitGo in 2021.

5 - References: Boston Consulting Group

REGULATIONS[6]

Regulations on cryptocurrencies are getting more stringent on the global level. In EU, cryptocurrencies are currently covered under 5AMLD and local rules of each specific countries.

FRANCE

The French PACTE law was introduced in 2019, regulating the crypto sector by four basic principles: a) Legal status. Crypto firms are legally defined as digital asset service providers, or DASPs (PSAN in French); b) AML/CFT obligations. The AML/CFT obligations mandated by French regulators are based on the principles of the EU's Fifth AML Directive, which France implemented in January 2020; c) Mandatory registration. Any crypto firm operating in France or working with French clients must register with the Financial Markets Authority; d) Optional licenses. For additional administrative and marketing opportunities, French crypto firms can apply for non-mandatory licenses from the AMF. Prior to June 2021, these only affected crypto-to-fiat services and crypto custodian providers. In June 2021, France enacted new crypto regulations (Ordinance 2020-1544), that impact not only French companies, but also international crypto firms seeking to operate in France. As the latest regulations now come into effect, crypto-to-crypto exchanges and trading platforms are subject to the same AML/KYC obligations and mandatory registration as other crypto firms. In addition, KYC regulations have tightened in the French crypto sector in general. However, the latest rules now permit the use of third parties for fulfilling KYC obligations.

GERMANY

Germany was one of the first countries to provide legal certainty to financial institutions, allowing them to hold crypto-assets. Regulations stipulate that citizens and legal entities can buy or trade crypto assets if it is done through licensed exchanges and custodians. Firms must be licensed with the German Federal Financial Supervisory Authority54 (BaFin). BaFin views and classifies cryptos as "units of account" within the meaning of the German Banking Act. They are therefore not legal tender, money, or foreign exchange notes or coins. The regulators have agreed, however, that they are deemed "crypto-assets" in accordance with the definition of financial instruments.

SPAIN

Despite having no formal legal status, virtual currencies in Spain are taxable as income and under VAT. In 2021 the Spanish regulator issued a joint statement warning of the risks and volatility associated with cryptos. The joint statement also highlighted that, from a legal standpoint, cryptocurrencies are not a means of payment and are not backed by a central bank or other customer protection mechanisms or authority. Spain issued Royal Decree Law 5/202176 which included a provision to regulate advertising related to cryptocurrencies.

MICA

In June 2022, the European Commission hammered out a new law known as Markets in Crypto-Assets (MiCA). This new regulation attempts to create a comprehensive regulatory framework for digital assets throughout the European Union. It will cover issuers of unbacked crypto-assets, and so-called "stablecoins", as well as the trading venues and the wallets where crypto assets are held. Under the provisional agreement achieved, crypto-asset service providers (CASPs) will need an authorization in order to operate within the EU, and they will have to respect strong requirements to protect consumer wallets and become liable in case they lose investors' crypto-assets. The rules are expected to come into force as early as 2024.

Overall, to launch crypto products, banks will have to face increasing regulatory risks and the tightened policies would also have certain impacts on compliance costs.

6 - References: European Council, Thomson Reuters

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