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Banking as a Service: An Overview

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ABSTRACT
Banking as a service (BaaS) is a type of financial technology that helps software platforms access banking capabilities traditionally only offered by a licensed bank. It enables non-banks to provide financial services to their customers. It is a great opportunity for existing banks, insurers, and wealth managers to reach a greater number of customers at a lower cost by teaming up with non-financial businesses. A BaaS provider makes it easy for any business to embed the financial services traditionally offered by a bank-such as monetary accounts, cards, and loans-directly into its existing software. The significance of BaaS lies in its ability to democratize the banking value chain, giving rise to specialized propositions that meet the rising demand for embedded financial services. This paper covers the basics of BaaS.

KEYWORDS: *banking as a service, white label banking, finance, finance industry*

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INTRODUCTION

Banking as a service (BaaS) is a model where licensed banks provide their infrastructure, services, and APIs to third-party businesses, allowing them to offer banking products without needing a banking license themselves. By promoting collaborations and partnerships between financial institutions and non-financial companies, BaaS encourages a more vibrant fintech ecosystem [1]. With the proliferation of banking-as-a-service (BaaS) tools, it is easier than ever for platforms to integrate financial services directly into their product. With these tailored financial services, platforms become a one-stop destination, enabling customers to manage all aspects of their business in a single place.

When a software platform uses a BaaS provider, this is typically called “embedded finance.” Embedded finance refers to the integration of financial services directly into non-financial platforms, allowing users to access banking, payments, or lending services without leaving the platform they are using. Embedding financial services into your software saves time, energy, and resources for your customers. BaaS and embedded finance are closely connected, as BaaS provides the infrastructure that makes embedded finance possible.

The banking sector is in transition. Historic pressures and the transformational arrival of fintechs mean the financial services marketplace is undergoing significant reconfiguration. Traditional banks have been facing stiff competition from three sources. First is the entry of tech giants such as Google, Apple, and Meta into the digital payments space. Second is the rise of new-age digital banks and fintechs that focus on providing specialized financial services to their customers. Third, larger institutions are often held back by a mountain of legacy IT. BaaS is one way for licensed banks to bridge the gap between where they are and where they need to be. It is also creating new opportunities for banks to reimagine and restructure themselves to adapt to this digital age [2].

WHAT IS BANKING AS A SERVICE?

Banking as a service (BaaS), also known as white label banking, is a financial industry concept that refers to the delivery of banking and financial services through a third-party platform or API (application programming interface). It is a model that allows non-bank businesses to offer financial services by integrating banking capabilities directly into their own products. At its core, it relies on financial APIs that allow third-party companies to access bank infrastructure and offer banking services through their platforms. APIs form the banking core framework. Figure 1 shows the service stack for BaaS [3]. While Internet as a service (IaaS), software as a service (SaaS), and business process as a service (BPaaS) provide technology and processes, BaaS enables banks and non-banks to offer a host of completely new financial products to their end customers.

BaaS allows companies to offer banking services by embedding financial capabilities into their platforms. The rise of BaaS has been a game-changer for the banking industry, driving a shift from conventional banking methods to more integrated digital solutions. BaaS helps move new products to market faster by partnering non-financial companies (NFCs – also known as non-banking companies) with the infrastructure of regulated financial institutions. BaaS can allow virtually any business to become a banking product provider with just a few lines of code. Figure 2 shows a representation of BaaS [4], while Figure 3 shows the relationship between Baas, the customer, and the business [5].

To offer banking services, the federal government requires some form of banking license, but licenses are nearly impossible for non-banks to obtain. BaaS providers allow non-banks, such as fintech companies, startups, and others, to leverage the infrastructure and capabilities of traditional banks to provide various financial services to their own customers without having to hold a full banking license themselves. They act as a middleman between banks and businesses. This allows these third-party companies to develop and offer their own financial products and services. These range from debit cards and loans to mobile bank accounts and payment services. The services must be in legal compliance with the banking laws in the regions where it is made available.

How BaaS works is shown in Figure 4 [6]. The front end of a non-bank business is joined to the BaaS provider via an application programming interface (API), which is a connection between computers or computer programs. It is a type of software interface that offers a service to other software, allowing businesses to provide their customers benefits through their own apps and websites. Figure 5 shows what one should look for in a BaaS provider [7].

EXAMPLES OF BANKING AS A SERVICE

Banking as a service model is being implemented across industries. Brands such as Uber, Square, and Starbucks offer different services through their platforms, such as debit cards, payments, and loans. Figure 6 shows some companies that use BaaS [7]. Examples of companies implementing BaaS include the following [8-10]:

- *Shopify:* This is a leading global commerce company, providing trusted tools to start, grow, market, and manage a retail business of any size. Shopify helps merchants finance their inventory, warehouse the inventory, ship the product, and accept customer payments all on one platform. Shopify realized that many of their customers (ecommerce merchants) were already using Shopify to run all aspects of their businesses. By making bank accounts available to them, Shopify helps them avoid many of the fees typical of traditional banks and get paid faster.
- *Starbucks:* This company embraced this idea with its app and loaded it with money to make purchases at the store. The bank's system communicates with the restaurant via an API and webhook, allowing customers to access banking services directly through the Starbucks website. Starbucks does not touch the money directly; it acts as an intermediary, which allows it to avoid any regulatory services a bank needs to perform.
- *Marqeta:* Although Marqeta is primarily known for card issuance, the company is also active in the BaaS space. The company provides APIs for card issuance, payment processing, and digital wallets, enabling businesses to develop innovative payment solutions. Marqeta focuses on debit cards and payments and recently went public. It partners with small banks. Marqeta's main focus is on card-control features for its debit card offerings.
- *Solarisbank:* Solarisbank is an example of a new-age bank. It is a Berlin-based banking as a service provider offering a range of financial services and APIs for companies operating in Europe. The company positions itself as a banking-licensed technology company that enables businesses to develop and offer financial products without having to obtain a banking license themselves. SolarisBank powers many of Germany's largest fintech players with its banking license and its suite of API solutions.
- *Galileo:* Galileo is recognized as one of the top banking as a service providers, known for its powerful API platform, debit card issuance, and

other financial services. One of Galileo's strengths is its flexibility. The platform is designed to support a wide range of financial services, allowing companies to tailor their offerings to their specific needs and audiences. Galileo is now part of the student loan provider SoFi and offers debit, prepaid, and investment opportunities through SoFi's platform.

- *Toast:* Toast provides hardware and software that helps restaurants get paid by diners. When they talked to restaurant owners, Toast realized that many of them could not get the financing they needed to run their businesses. Toast started offering restaurant financing in 2019.
- *Gusto:* Each month, Gusto helps their small-business customers send millions of paychecks via direct deposit. They realized that many of the people they were helping to pay did not have bank accounts—and many more were ready to switch banks for a better experience (faster payments, fewer fees, etc.). Offering bank accounts enables Gusto to keep more money "on their platform;" i.e. they can earn various types of fee revenue from it.
- *Bankable:* This serves financial institutions, corporates, and fintech entrepreneurs through its payment solutions platform. Its API-based and white-label services include a virtual ledger manager, digital banking, and branded payment cards with features like SEPA and SWIFT payments.
- *Starling Bank:* This is a challenger bank offering digital banking and open banking features through its BaaS platform. It includes business banking, lending, digital wallets, and integration with third-party providers. Their clients include fintech startups and digital payment providers.
- *BBVA:* This is an innovative first mover bank in the BaaS space. BBVA Open Platform is a BaaS platform serving the US and global customers. This is a bank-created BaaS system, powers digital-only banks and non-bank applications in the US. The Uber app integrated BaaS from BBVA into its app in Mexico. This Mexican Uber app from BBVA provides a Driver Partner debit card. It lets Uber drivers and delivery partners receive earnings and access loans and gas discounts.
- *Treezor*: This is a Paris-based banking platform as a service, a "one-stop payment solution." The service company offers a wide range of financial services, including payment processing, electronic wallets, card issuance, and KYC compliance. The offering is particularly suitable for financial institutions, mobility services, neobanks, and employee benefit programs. Recently acquired by Societe Generale Group, thanks to their innovative expertise, the startup is accredited to provide personalized payment services to its customers.

APPLICATIONS OF BANKING AS A SERVICE

Today, there are a number of banks without physical branches that offer competitive financial products and enhanced user experiences. Figure 7 shows some BaaS examples [11]. Common applications of BaaS include the following [12]:

- *Payment Services:* Broadly speaking, payments involve moving funds into and out of bank accounts. An e-commerce platform partners with banking as a service companies to provide a seamless payment experience. For example, an e-commerce giant like Shopify uses Stripe to optimally integrate SME bank accounts with its e-commerce platform. The main benefit is the creation of a comprehensive dashboard outside of the traditional banking system. Although many banks are still the main source of bank accounts, countless people have their direct deposit immediately routed from their bank account to another institution, such as PayPal or Square, for daily payments. Payment methods that can be enabled by banking as a service include cards, wires, and internal transfers between accounts at the same bank.
- *Open Banking:* Open Banking is a secure way for banks to share financial information such as account and card data with third party providers. It has been implemented globally to revolutionize how consumers manage their finances. It is driving the evolution of BaaS by encouraging data sharing, driving innovation, and enabling collaboration. BaaS providers using open-banking are well-positioned to deliver more customer-centric and advanced financial services while navigating the changing regulatory landscape. BaaS is similar to open banking in that it grants access to third parties through open APIs. It is a concept under open banking. While BaaS allows non-banks to embed financial services in their own product offering, open banking is a much broader term that allows third parties to access customer financial data through banks. Open banking differs from BaaS services in enabling data flow from one source to another but does not provide banking services such as BNPL that BaaS providers offer. Figure 8 compares BaaS with open banking [6].

- *Financial Inclusion:* BaaS can increase financial inclusion by providing access to financial services for underserved populations. By integrating financial services into widely used platforms, BaaS helps bridge the gap for those who may not have access to traditional banking. There will be a stronger focus on financial inclusion and access to financial services for underserved populations.
- *AI-Powered Solutions:* AI-powered BaaS solutions use complex algorithms to handle massive amounts of real-time data, giving personalized financial services to individual consumers. With the help of artificial intelligence, it is possible to monitor customers' spending behavior and make personalized investment management suggestions based on their financial goals.
- *Blockchain Integration:* Blockchain is another prominent future trend in the realm of BaaS. Blockchain technology offers several compelling advantages, like robust security features, transparency in transactions, low costs for cross-border payments, etc. Blockchain can serve as a powerful tool for reducing fraud and unauthorized access, instilling trust and confidence among both financial institutions and their customers.
- *Online Banking:* BaaS can help fintech/non-fintech companies provide online banking services to their customers. Instead of focusing on bank licenses and integrations, they can focus on improving their services. These user-friendly and technologically advanced products can be a better alternative to traditional banking for their customers. Neobanks, also known as digital banks, operate solely online. They offer digital, mobile-first financial solutions such as payments, money transfers, lending services, etc. BaaS empowers neobanks to offer a wide range of services while focusing on a seamless and customer-centric digital experience.
- *Offer Loans:* BaaS can also allow businesses to lend funds to customers. For instance, an airline can offer one-click loans to customers to ensure undisrupted travel plans and a better customer experience. An app can help them keep track of these monthly payments.
- *Investment Services:* Another way non-bank and fintech players use the BaaS model is by helping customers automate finances and investing assets. They can automatically rebalance the portfolio that is consistent with the customer's investment plan. They can also match the investment needs of the customers.
- *Offer Debit and Credit Cards:* Cards (including virtual cards) allow your customers to make payments at the point of sale, either online or in person. They can be a great way to drive acquisition, engagement, and retention. Banking as a service or BaaS model can allow non-banks to offer credit and debit cards to their customers. Customers can get real-time updates of all their transactions through an app. The customer's account details and payments are displayed in a user-friendly manner.

Figure 9 shows some of these applications [4].

BENEFITS

Banking as a service (BaaS) offers several compelling benefits to businesses, making it an attractive option for companies looking to enhance their financial offerings. BaaS has transformed traditional banking practices by shifting towards more digital and embedded financial services, making banking more accessible and convenient for users. It encourages diversity in banking provision by allowing new companies to rapidly launch products while focusing on their core competencies. Banks and other financial institutions can expand their reach and serve more customers to get additional volume and enlarge revenue correspondingly. Other benefits of BaaS include [9,13]:

- *Reduced Costs:* The biggest advantage of banking as a service is that it eliminates the need for businesses to build and maintain their own financial infrastructure, which can be costly and time-consuming. This can lead to significant cost savings too over time. Non-bank businesses are not required to acquire a banking license of their own.
- *Efficiency:* BaaS can significantly reduce the time to market for many offerings. That efficiency results in lower barriers to entry, because start-ups do not need to raise capital to wait out a prolonged license approval process before they start generating revenue.
- *Collaboration:* Collaboration between banking SaaS companies and traditional financial institutions is changing the landscape of modern banking services, as banking as a service companies bring a new level of agility and flexibility to the financial industry.
- *Ease of Integration:* The best BaaS providers make it as easy as possible for you to get started. While there will be some integration time required, you should be able to access developer-friendly APIs and build on top of ready-to-use financial infrastructure. Direct integration offers

more customization and control, allowing businesses to tailor financial products to their specific needs. This integration opens up significant market opportunities, as it enables a broader range of businesses to participate in the financial sector without becoming full-fledged banks.

- *Streamlined Compliance:* Ensuring compliance with regulatory standards is critical. Services offered through BaaS providers are part of a regulated industry, resulting in a long list of compliance and regulatory requirements you must manage and maintain. Your BaaS provider should significantly help handle compliance and regulation requirements on your behalf.
- *Convenience:* Today, customers (be it individuals or businesses) are being offered innovative financial services within the platforms that are most familiar to them. Customers are demanding simple, embedded, and direct experiences. With BaaS, customers can enjoy convenient one-to-stop-shop solutions that cater to their unique needs, offer meaningful value, and provide engaging customer experiences. They appreciate the convenience of accessing financial services without leaving the platform they are already using.
- *Increase in Openness:* The development of banking APIs and universal access is being promoted well by open banking and regulatory trends. Several leading fintech companies are driving significant changes in customer expectations related to data and account information portability. This plays vital role in increasing banking as a service projects.
- *Improved Customer Experience*: BaaS enables businesses to provide a seamless and user-friendly experience for their customers, improving overall satisfaction. Integrated financial services reduce friction and enhance the user journey. By offering financial services directly within their products, businesses can increase customer loyalty and retention.
- *New Revenue Streams:* Banks need to navigate more competitive markets and find ways to drive profits while keeping costs low. Creating a BaaS platform and allowing third-party providers to access it for a fee can inject fresh revenue into the bank. BaaS enables businesses to generate new revenue streams by offering financial services to their customers. This diversification can lead to increased profitability and business growth.
- *Reduced Costs:* BaaS can reduce costs for businesses by eliminating the need for traditional banking relationships and infrastructure. Companies can leverage the existing infrastructure of BaaS providers, saving on development and operational expenses. BaaS cannot only help banks generate revenue but also help them with cost-saving. Banks do not need to invest resources in technological development.
- *Changing Trust Levels*: Trust levels are changing constantly in financial services. While people are beginning to trust fintech companies more, there are several brands that have gained a higher trust level as compared to others.
- *Global Reach*: BaaS empowers businesses to expand their services beyond their local or regional boundaries. It is all because many banking as a service offerings are built on cloud computing infrastructure. Cloud-based solutions can be accessed from anywhere in the world, making financial services available to a broader audience.

Some of the benefits/advantages of BaaS are shown in Figure 10 [11].

CHALLENGES

While BaaS offers significant opportunities, it also comes with challenges that businesses must navigate to succeed. Some incumbent banks may be hesitant about using BaaS because of concerns about the service robustness of a third-party provider or a loss of independence. We need to educate the executives of the numerous benefits of BaaS, not just those of cost, but of technology simplicity, agility to respond quickly, iterate products to meet customer demands and feedback. Ensuring that BaaS fits seamlessly into a company's existing business model can be complex and requires careful planning. Other challenges of BaaS include the following [14]:

- *Security:* Cyber-crime remains a constant and serious threat to the banking industry. Security is critical in this setup, with solutions ensuring that only authorized users access sensitive banking functions, and strong encryption protecting transaction data. Security measures, including secure authentication and transaction monitoring, are essential to protect both the business and its customers from fraud. Solid security measures should be prioritized, as any breach can affect the clients and cost reputation in the market. Identity security is a cornerstone of any successful BaaS platform, as it safeguards the integrity of financial transactions and protects sensitive user information. Maintaining robust identity security requires a combination of best practices. It is important that each service be properly firewalled to prevent malicious intrusions.

- *Scalability:* The BaaS platform should ensure seamless scalability to accommodate the growth and changing requirements of partners. A BaaS business is scalable and agile, making it particularly suitable for entering new markets and then expanding.
- *Capital:* As part of making lending and financing options available to your customers, you will need to figure out where the money to fund the loans and/or financing will come from. For example, if you issue 100 loans of $10k each, the program will require $1m of capital.
- *Increased Competition:* BaaS has removed multiple barriers to entry for new players in the financial services space by providing a simple and affordable way to build a banking infrastructure. Competition is not only coming from within the financial services industry, new financial products and services are being launched by businesses that are not fintech companies or challenger banks. Increased competition has led to increased innovation in the banking space which in turn has led to improved digital experiences for customers.
- *Modernizing Traditional Banks:* The core systems of most traditional banks are outdated. They are not compatible with modern technologies. This can be a big issue in implementing the BaaS model as it would cause hindrances for third-party integrations.
- *Customization Limitations:* BaaS solutions cannot always appear a good match for every company. BaaS technologies are intended to serve a large number of clients, therefore they provide a standardized set of services and features. As a result, they may not always cater to businesses individual needs.
- *Vendor Dependence:* When businesses use banking as a service solutions, they rely heavily on a provider for important activities like storing data or handling transactions. When a BaaS provider experiences technical challenges, downtime, or even a security incident, the businesses that rely on their services may experience significant inconvenience too.
- *Customer Recognition*: It is not easy for clients to entrust their financial data to a third-party business they have never heard of. By linking with well-known banking institutions, BaaS providers build on the bank's reputation in customers' eyes and quickly gain their trust.

Some of the challenges of BaaS are displayed in Figure 11 [11].

CONCLUSION

Banking as a service (BaaS) is an end-to-end process where third parties can access and execute financial services capabilities without having to develop them organically.

BaaS is disruptive to the financial services marketplace because of the very fact that it can be an enabler. Today, BaaS is developing immensely, with more and more banks and non-bank businesses seeking to tap into this attractive space. BaaS is appropriate for, and appeals to all types of financial institutions, from incumbents to new challengers, from neo banks to outright fintech players. Several industries, including telecom, insurance, healthcare, and e-commerce, actively explore BaaS infrastructure to offer modern contextualized banking services. BaaS is a clear opportunity for financial institutions to capture new revenue growth at a low cost [15]. It is an incredible way to widely increase the reach of banking for companies capable of delivering valuable services to their customers around the world.

With fintech growing across industries, banking as a service is gaining more and more traction. The synergy between traditional banks and BaaS providers is reshaping the financial landscape. The future of financial services is bright, with BaaS and embedded finance driving significant advancements. These trends will shape a more inclusive, secure, and customer-focused financial industry. More information on banking as a service can be found in the book in [16].

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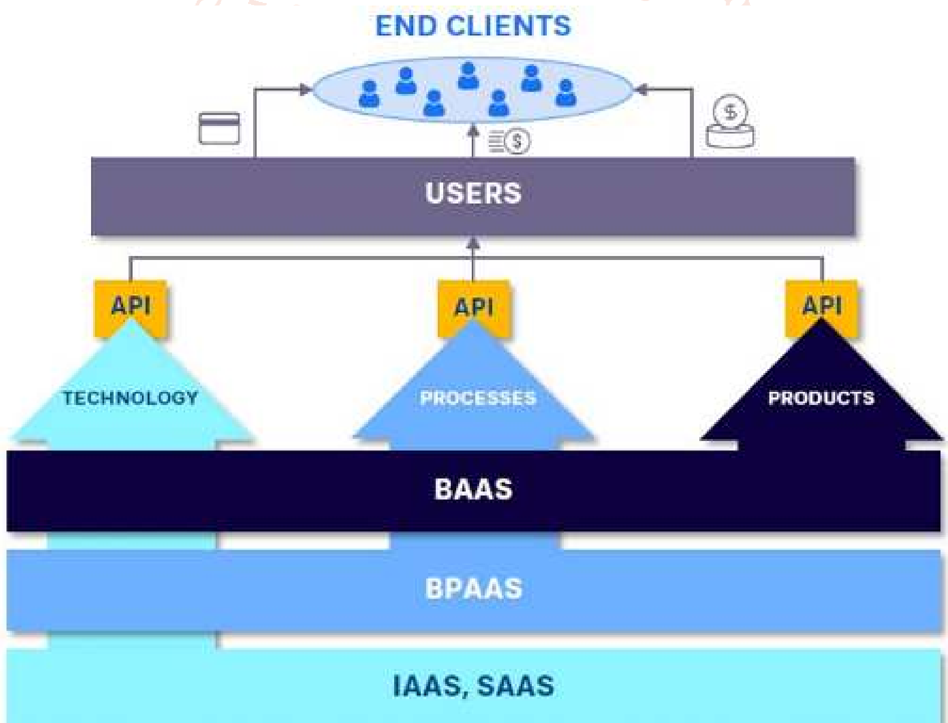

Figure 1 The service stack for BaaS [3].

Figure 2 A representation of BaaS [4].

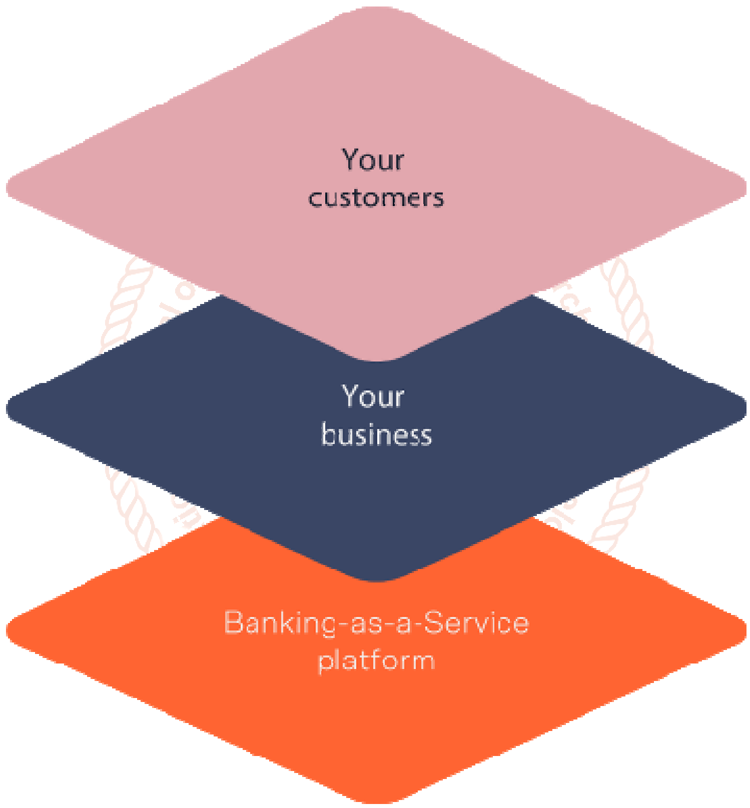

Figure 3 Relationship between Baas, the customer, and the business [5].

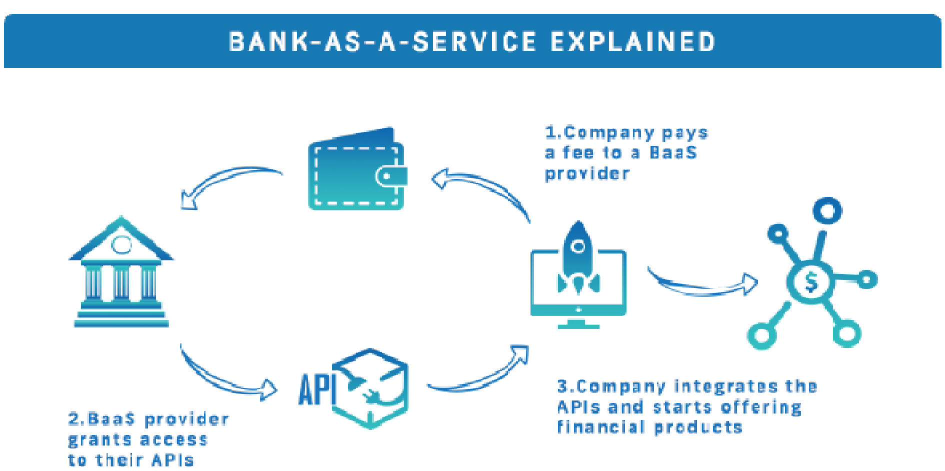

Figure 4 How BaaS works [6].

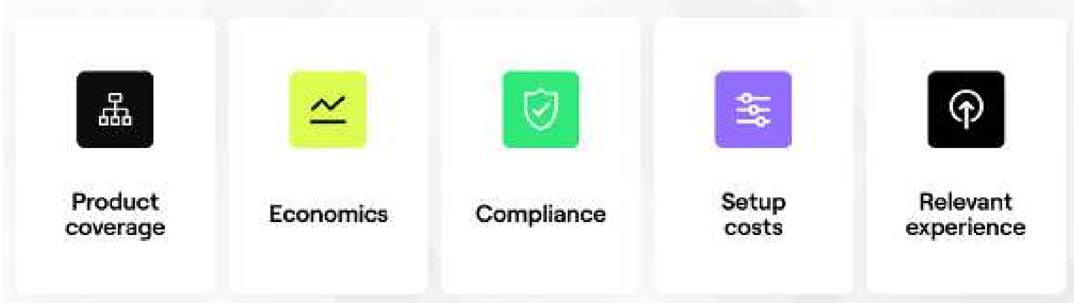

Figure 5 What one should look for in a BaaS provider [7].

Figure 6 Some companies that use BaaS [7].

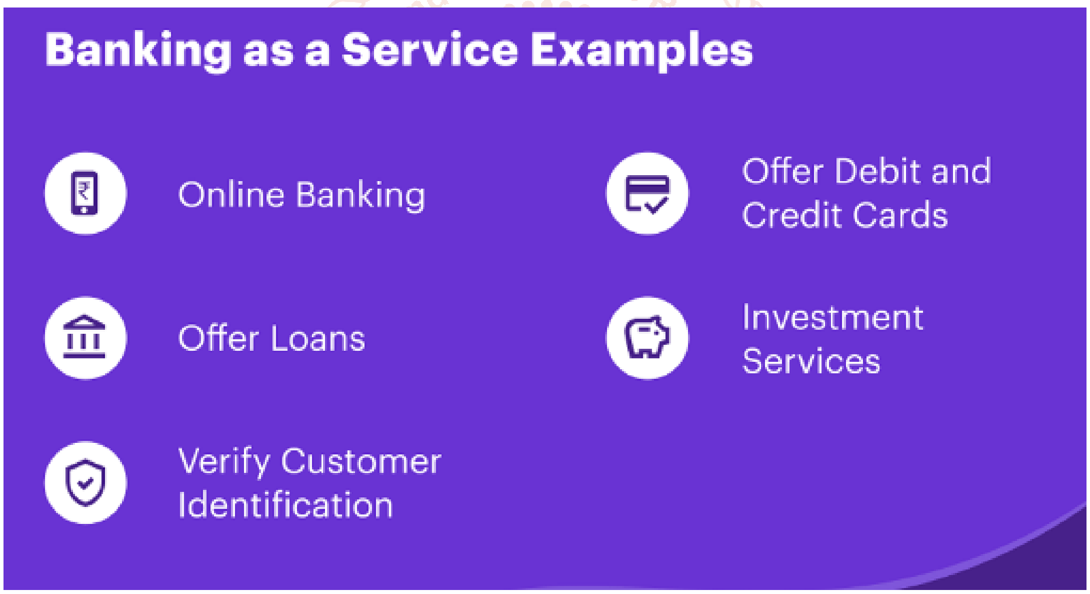

Figure 7 Some BaaS examples [11].

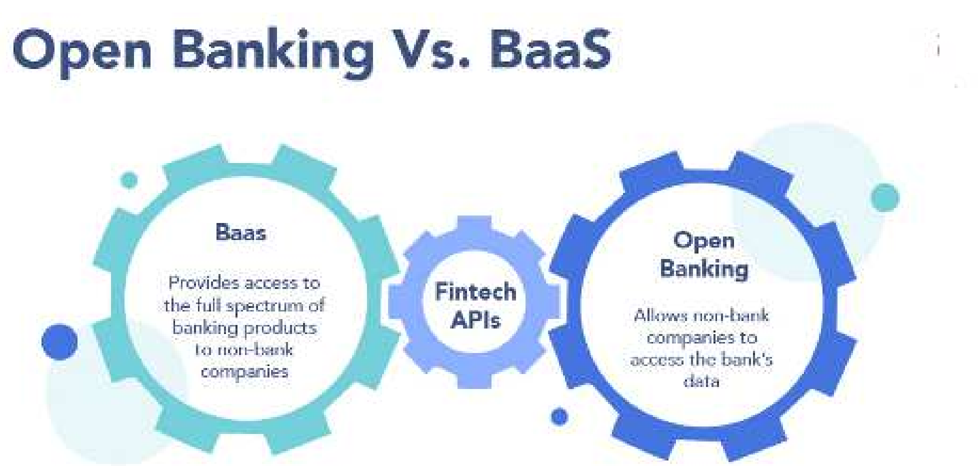

Figure 8 Comparing BaaS with open banking [6].

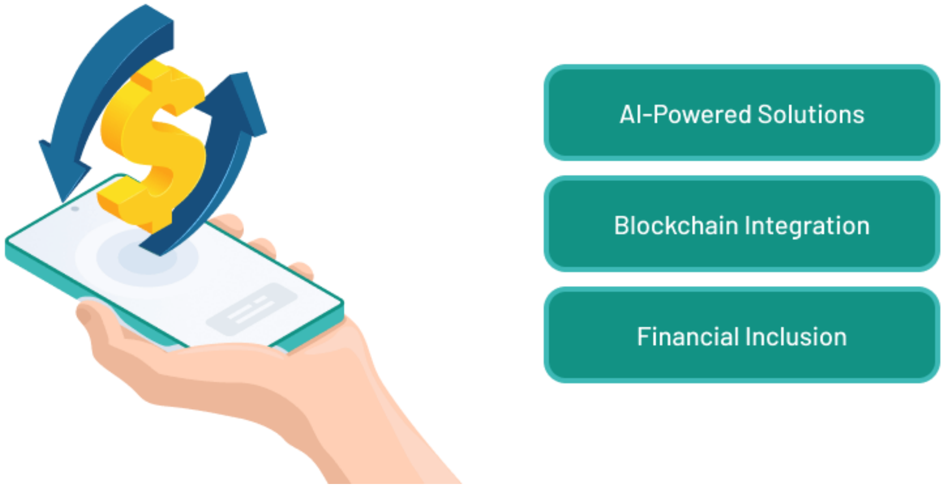

Figure 9 Some applications of BaaS [4].

Figure 10 Some of the benefits/advantages of BaaS [11].

Figure 11 Some of the challenges of BaaS [11].