

Analysis

Embedded finance

An exploratory analysis of the integration of financial products in non-financial platforms

DeNederlandscheBank

EUROSYSTEM

Embedded finance

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Disclaimer: This study is based on external publications and additionally on interviews with experts from DNB and the AFM. The examples in this report are based on public sources accessible to everyone. While we have done our utmost to illustrate many existing initiatives, it is possible that some relevant information was unavailable or has not been included. This study therefore does not provide a complete picture of the initiatives in the Netherlands.

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1 Introduction

Financial products are being integrated ever more seamlessly into our increasingly digital world, bringing convenience but also risks. We communicate on social media, shop online, work remotely and use digital tools for all manner of tasks. Our interactions, information sources and even leisure activities are increasingly interwoven with digital technologies. Financial products are also increasingly being integrated into digital interfaces that users interact with on a daily basis. As a customer, you can make payments directly in a company's app, choose to pay for your purchases in instalments and take out travel and trip cancellation insurance right away when booking a trip (*'the financial service is available precisely at the time and place it's needed'*). Customers benefit from the convenience of this 'embedded finance' that enables them to find, select and pay for a product within the same environment, but this development also entails risks. Many of these risks are rooted in the growing complexity of the financial value chain in embedded finance. The value chain is becoming fragmented and disjointed, leading to reduced transparency and increased complexity. Given the expected growth and potential risks of embedded finance, it is becoming increasingly important to monitor these developments closely.

This DNB analysis focuses specifically on the integration of financial products in non-financial apps and services from operators that are not licensed as financial service providers². We have previously devoted attention to the growing role of BigTechs in financial services.³ Whereas the BigTech study focused particularly on the relationship between financial institutions (FIs) and large technology companies (BigTechs), this study focuses on the wider development of embedded finance. It covers not only the major players such as Google, Amazon, Apple and Microsoft, but also smaller e-commerce platforms offering embedded finance services. The scope of this analysis excludes BigTechs and FinTechs that have their own licences to provide financial products. This analysis also provides more context and detailed explanations of the mechanics of embedded finance, the kinds of embedded finance initiatives we are currently seeing in the Netherlands and their implications, including with regard to supervision.

² Our focus in this analysis is specifically on cooperation between regulated financial institutions and unregulated operators. Embedded finance also occurs in forms whereby a regulated financial institution (such as a bank) offers its services to other regulated customers (such as investment funds and platforms, payment institutions, crypto and digital asset providers). These forms, in which the white label partner is a regulated operator, appear less risky from a supervisory perspective.

³ DNB (2021), [Changing landscape, changing supervision](#)

2 What is embedded finance?

2.1 Operation

The financial sector value chain is becoming increasingly fragmented. A specific and innovative manifestation of this is embedded finance, which is also referred to as 'Banking (or Insurance) as a Service', or 'White Labelling'.

Embedded finance is a business model that enables unlicensed operators (the white label partners) to partner with a regulated financial institution (the embedded finance provider) to integrate financial services, products and functionalities into their products and services under their own brand name. The white label partners use the financial institution's licence. This means end-users can access financial services more easily without coming into contact with the financial service provider.

The regulated financial institutions may be 'traditional' operators such as banks and insurers, but also FinTech operators. The white label partners are usually digital platforms and marketplaces focusing on, for example, e-commerce, administration services (payroll, invoicing), accounts receivable management, personnel/self-employment or HR services and technology companies, as well as traditional non-financial companies such as airlines and telecom providers.

In many cases the regulated financial institution also offers its technical infrastructure directly to the white label partner through Application Programming Interfaces (APIs). An API is a set of rules and protocols that connect different software applications. It enables developers to use a system's functionality without having access to its internal workings. In the context of banks and financial institutions, the use of APIs makes it technically possible for external operators, such as the white label partner in this case, to access certain financial services and data. The provision of APIs with financial data is encouraged by legislation regarding open banking. The revised Payment Services Directive (PSD2⁴), for example, enforces higher security standards for online transactions. One of the aims of PSD2 is to encourage the development of alternative digital payment methods on devices such as mobile phones, computers and tablets, enabling third parties to access consumers' account information without having to go to their bank's online portal. This enables open banking, whereby third-party financial service providers are given access to consumer banking data, transactions and other financial data held by banks and non-bank financial institutions. Customers are normally required to give some form of consent for the granting of access to their data. This often involves ticking a box on the terms & conditions screen in an online application. PSD2 is currently being revised. On 28 June 2023, the European Commission (EC) proposed a new package of rules (PSD3⁵ and PSR⁶) and simultaneously published a proposal on 'Open Finance' (FIDA⁷), focused on sharing more financial data than just payment data.

Another increasingly common arrangement is one where a software producer or vendor is positioned between the financial institution and the white label partner and creates and supplies the APIs.

⁴ PSD2 legislation (2018) [Bulletin of Acts and Decrees 2018, 503 | Overheid.nl > Official Notices \(officielebekendmakingen.nl\)](#)

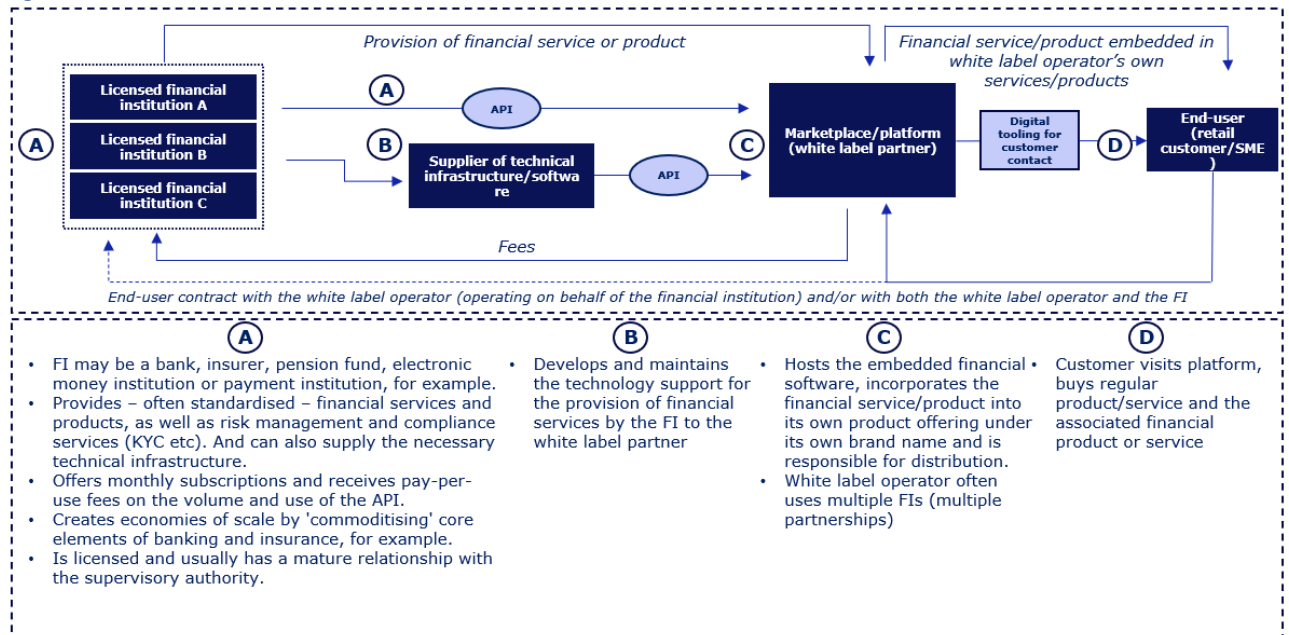
⁵ PSD3 proposal (2023) [EUR-Lex - 52023PC0366 - EN - EUR-Lex \(europa.eu\)](#)

⁶ PSR proposal (2023) [Regulation - EU - 2024/886 - EN - EUR-Lex \(europa.eu\)](#)

⁷ FIDA proposal (2023) [EUR-Lex - 52023PC0360 - EN - EUR-Lex \(europa.eu\)](#)

White label operators then use these APIs to integrate the financial services and products into their own services and underlying software. The larger platforms and marketplaces or FinTech operators sometimes also develop the necessary infrastructure independently in-house. See Figure 1 for a stylised illustration of the embedded finance value chain.

Figure 1: Embedded finance value chain



Even in a more fragmented and complex embedded finance value chain, the responsibility for product or service quality and potential liability towards the consumer rests with the licensed financial institution. That still applies if it 'outsources' parts of the service to, or collaborates with, white label operators. Therefore, as part of their sound and ethical operational management, financial institutions must have an adequate risk framework in place to constantly monitor and control the risks they incur as a result of working with third-party (white label) operators.

At the same time, embedded finance is blurring this division of roles and responsibilities in practice. This is because the white label partner is not only responsible for marketing, as in the case of a regular distributor, but also provides the financial services and products under its own brand name by embedding them in its own product and service offering. The financial services and functions such as payments, personal loans and insurance are integrated, so to speak, in the white label partners' apps and platforms by means of APIs, enabling consumers to access them without leaving the app or platform. To a certain extent, the white label partners thus also become de facto financial service providers. Take the case of embedded lending, for example. Although in this product category the consumer often ultimately enters into a commitment only with the underlying financial institution, the role of this institution (and the extent to which it is in control) may be quite limited in practice. This will be the case, for example, if it grants a loan facility subject to borrowers fulfilling various risk parameters and leaves the credit assessment and decisions on individual applications entirely to the white label platform on the basis of the customer data on the platform. How common this is in practice remains unclear.

2.2 Product range and sectors

Embedded financial products can in principle cover the entire range of financial services, from banking and payment products and services through to insurance, investment and wealth accumulation products. White label partners often also source support services in the compliance field, such as KYC/CDD processes. See Box 1.

Box 1: Illustrative examples of embedded financial products and services

- A consumer, when purchasing a product on an e-commerce platform, can take out a personal loan within minutes to finance the purchase.
- A company selling through a digital platform can access corporate finance or working capital through the platform and pre-finance its invoices to retail customers.
- An e-commerce platform offers travel and trip cancellation insurance as part of its service package for customers booking travel through its platform.
- An airline offers travel insurance and delay insurance that pays out automatically if the flight is delayed as an option when booking flights.
- Telecom providers offer smartphone insurance as an optional add-on for customers buying a new device or taking out a subscription.
- Car rental companies offer various insurance options when renting a vehicle, such as damage, theft or liability insurance.
- Airlines, telecom providers and train operators offering payment services (such as credit cards) to regular (e.g. frequent flyer) customers.
- A self-employed person who, when accepting an assignment through a platform, is also directly insured for occupational disability and, in addition, is paid automatically through the platform at the end of the day.
- A consumer can buy insurance per ride in shared cars or on shared scooters, per device in the home or per part of a holiday.
- A consumer can buy gadget insurance when purchasing a smartphone, with the claims process automated. The insurance uses a detection system in the phone that immediately notices if, for example, the phone screen is cracked, after which compensation is paid automatically.
- SME partners of online shops can take out embedded insurance, for example for product liability, employers' liability or inventory insurance.
- Consumers can buy embedded insurance when buying a video game online (cyber insurance), a piece of jewellery (theft insurance) or a ski pass (accident and casualty insurance).
- Employers and industry associations offering white-label third-pillar pension solutions to their employees as part of their fringe benefits. Advisory firms and consultants can also offer white-label pension solutions to their customers as part of their services in the area of pension planning and administration.

As can also be seen in Box 1, embedded financial services are currently found particularly in the retail and e-commerce services sector and in mobility services (such as grocery deliveries, ride-sharing and taxi services). These are highly digitalised sectors, where embedded payment services have already been available for some time and serve as a logical springboard for a wider range of embedded financial services in which consumer preferences are focused particularly on convenience and speed. The current position in 2024 is that embedded finance appears to be somewhat less developed in many other sectors of the real economy.

3 Driving trends

The future growth potential of embedded finance is underpinned by a number of structural trends, such as digital developments and platformisation. Technological and digital advances make it possible to break financial services and products down into separate components and translate them into software formats that are easy for third parties and developers to access and use. Another underlying trend is the ongoing 'platformisation' of the economy. Online commerce is gradually becoming more integrated into consumers' lives. It is possible that consumers in the future will buy most of the products and services they need from digital platforms with integrated financial services.

Embedded finance also has growth potential, as financial institutions and their white label partners can take advantage of each other's comparative advantages. Financial institutions rely on their strengths in terms of infrastructure, experience and expertise, risk management capabilities and, of course, their licences and existing relationships with supervisory authorities. The white label partners have comparative advantages in terms of their existing customer base (through trust-based relationships with their customers and access to underlying customer data), the use of data analytics to provide personalised product and service offerings and a digital environment with a high level of consumer convenience.⁸ In this way, embedded finance can create growth potential for both financial institutions and their white label partners by catering to changing customer preferences and attracting a larger customer base.⁹

Integrating financial services into their own products and services can open up potentially attractive new income streams for white label partners such as e-commerce platforms. White label operators then become more attractive to their customers. This can help generate greater customer satisfaction and loyalty, and hence additional revenues. There may also be cross-subsidisation, with the additional revenues generated from financial services enabling the platform to lower the prices it charges for its regular products and services. The extensive customer data available to white label operators enables them to offer targeted, personalised financial services and products to their customers, who might otherwise find it difficult or even impossible to access particularly the more traditional forms of financial services¹⁰. For example, an e-commerce platform could use its long series of customer data to make a more granular assessment of its customers' creditworthiness and thus more easily see through a company's erratic, seasonally affected sales data.

Embedded finance also offers potentially attractive commercial opportunities for licensed financial institutions. At a relatively low acquisition cost, these institutions can access their white label partners' potentially large databases of customers they would normally find it harder to attract. Furthermore, the white label partners' customer data gives them better insight into customer behaviour and hence opportunities to develop newer, innovative products or services or to improve their existing offering. Finally, embedded finance could potentially accelerate the digital transformation that is already under way among financial institutions. Operators wishing to enter this market will need to move fast (or faster) to replace their legacy systems, for example. It should be borne in mind, however, that embedded finance brings not only opportunities but also risks (such as operational, financial and revenue model risks, see Section 5).

⁸ DNB (2021), [Changing landscape, changing supervision](#)

⁹ Bain (2022), [Embedded Finance](#), McKinsey (2019) [How the best companies create value from their ecosystems](#)

¹⁰ CGAP (2022), [Banking-as-a-Service: How it Can Catalyze Financial Inclusion](#)

4 The landscape in the Netherlands

It is difficult to gain a clear overview of the level of maturity of embedded finance in Europe and the Netherlands. There is a lack of hard data in areas such as transaction volumes – there being no reporting requirements for embedded finance – and there are no structured overviews of the licensees and white label partners involved. Announcements of new initiatives do not always make clear that they involve embedded finance, while partnerships between regulated operators and their white label partners are not always explicitly disclosed or explained.

Nevertheless, it seems clear that the scale of embedded finance is still limited in both absolute and relative terms (compared to traditional financial services). It is clearly still an emerging phenomenon, with white label operators (such as digital platforms) focused mainly on retail and SMEs for now and offering only a select range of specified (and possibly niche) financial services and products from their licensed partner. Within the range of embedded finance services as a whole, payment services and banking services (BaaS) appear to be the most developed, for example compared to embedded insurance (IaaS) and particularly embedded investment and wealth accumulation products¹¹.

Adyen and Mollie offer payment services that can be embedded in different types of digital platforms, including e-commerce, marketplaces and Software as a Service (SaaS) solutions. The direct integration of payments in a platform means that users can perform transactions without leaving the platform. Research conducted by Adyen in collaboration with the Boston Consulting Group (BCG) points to growing demand for financial services embedded in platforms. As many as 64% of small and medium-sized enterprises (SMEs) would be interested in financial services provided directly within a platform.¹² Adyen mainly serves large, global multinationals. Mollie, on the other hand, focuses mainly on SMEs.

Of the major Dutch banks, Rabobank and ABN AMRO in particular seem to be active in the embedded banking market in the Netherlands. They offer a wide range of mainly financing solutions that are available through various affiliated white label platforms. Rabobank has a well-known partnership with Bol.com. With the consent of suppliers operating on Bol.com, Rabobank uses sales data held by Bol.com to assess loan applications, enabling suppliers to receive an answer within 15 minutes (and, if the application is approved, to have the loan proceeds credited to their account within an average of four days).¹³ Another example is ING, which has developed a partnership with Amazon to offer SME loans and cashback deals in Belgium, Romania and Germany.¹⁴ More widely, the major banks have also developed open banking platforms that enable third parties to access certain banking data and services of consenting consumers through APIs, opening the way to innovation and new products. In the case of smaller banks, it is not always clear whether and to what extent they are developing embedded finance initiatives. A notable development outside the Netherlands concerns Germany's Solaris Group. Solaris is Europe's largest Banking as a Service provider. It is a German technology company with a full banking licence, as well as e-money and brokerage licences, which focuses purely on embedded banking and therefore does not provide 'traditional' banking services. Solaris has partnered with Visa, for example, to develop a German virtual debit card under the Samsung brand.¹⁵

¹¹ Bain & Company (2022) [Embedded Finance: What It Takes to Prosper in the New Value Chain | Bain & Company](#)

¹² [Embedded finance report: How platforms are revolutionizing SMB - Adyen](#)

¹³ Rabobank (2022), [Bol.com offers its retail partners Flexible Financing - Rabobank](#)

¹⁴ [ING in Germany and Amazon join forces in SME lending | ING](#), [Belgian customers to benefit from Amazon cashback offer | ING](#)

¹⁵ Solaris [Payment and digital wallet case study with Samsung | Solaris \(solarisgroup.com\)](#)

This can be added to the Samsung Pay app and linked to almost any German bank account. This means Samsung does not have to enter into contractual relationships with dozens of German banks.

The embedded insurance market still appears largely undeveloped in the Netherlands. The embedded insurance landscape is complex because many insurtechs and software providers act as links between insurers and platforms by providing technology that can seamlessly integrate insurance into existing products and services. As far as we can judge at present, large insurers seem reluctant both to offer such products and to enter into partnerships in this area. Moreover, it seems that insurers' existing data systems are not always sufficiently developed to meet the needs of potential white label partners. Insurers do nevertheless invest in embedded finance start-ups, for example through the Achmea Innovation Fund and NN Venture Capital¹⁶. Traditional insurers can thus take advantage of the innovation and technology offered by these companies without having to make major changes to their existing infrastructure. This also enables them to monitor developments and explore new opportunities while limiting any risks. The Achmea Innovation Fund, for example, recently invested in the European micromobility insurer Laka¹⁷, and previously in Alicia Insurance¹⁸, a fast-growing insurtech based in Rotterdam. Alicia Insurance provides bespoke insurance products that are directly embedded in freelance job-seeker platforms, such as those of Randstad, Knab or HeadFirst Group.

Finally, the development of embedded investment, wealth accumulation and pension products still appears to be in its infancy. As yet, there are few indications of broadly developed initiatives or widespread acceptance of such products. This may be due to the complexity of the products, the large number of legacy systems and asset managers' relatively low IT budgets. Internationally, however, more use cases of embedded investing are slowly emerging, such as integrated stockbroking and ETF trading, as well as new personal financial management initiatives such as 'Save Now, Buy Later' (SNBL). SNBL apps use various functionalities to support consumers in setting savings goals and then facilitate the completion of purchases at the appropriate time. For the customer, they essentially provide a short-term savings account, whereas for the counterparty they provide a (sometimes even interest-free) source of credit. In addition, there appear to be a growing number of new white label mobile wallet providers. A digital wallet is an application that enables users to securely store, send and receive cryptocurrency, for example. In the case of a white label wallet, the product can be adapted to the provider's own branding and distributed as a bespoke solution.

Box 2: Embedded finance in Asia

Embedded insurance seems to be gaining a foothold in Asia. This development seems to be supported by an inherently high rate of digitalisation among the population, regulations that provide scope for digitalisation in the insurance sector and a latent demand for insurance (given the average low insurance rate in many Asian countries). As a result, insurance is increasingly being integrated into other non-financial products and services consumers purchase online (from warranty insurance when buying a household appliance, to meal delivery platforms offering their couriers accident insurance, to products that automatically include some form of non-life or other insurance).

¹⁶ NN Group (2023) [NN Group launches corporate venture builder NN Ventures \(nn-group.com\)](https://nn-group.com)

¹⁷ Achmea (2024) [Achmea Innovation Fund invests in embedded bicycle insurer Laka](#)

¹⁸ Achmea (2022) [Achmea Innovation Fund invests in insurtech Alicia Insurance](#)

5 Risks

5.1 Source of risks

Embedded finance provides clear opportunities but also creates risks. Many of these risks are due to the growing complexity of the financial value chain underlying embedded finance. The value chain is becoming increasingly fragmented and disjointed, leading to reduced transparency and increased complexity¹⁹.

The underlying cause of these risks is a potential source of market failure in the embedded finance model. This stems from the principal-agent problem and associated risks of adverse selection. After all, the financial institution and the white label partner do not have the same incentives, given that the financial institution, as the licensee, in principle bears ultimate responsibility and accountability for the risks associated with embedded finance, while the white label partner is often times responsible for the sales process and the customer relationship (acquisition and distribution). This could potentially lead to excessive risk-taking on the part of the white label partner, for example if it accepts high-risk customers who would find it more difficult to access the traditional financial services channel (adverse selection).

5.2 Details of specific risks

Operational risks

Embedded finance products result from the interaction of systems used by multiple operators in the embedded finance value chain. This effectively creates multiple layers between the financial service or product and the end-user.

Financial institutions are thus exposed to potential operational vulnerabilities in their non-financial partners – their white label partners and/or software vendors. If a white label partner's technical infrastructure is not sufficiently robust, for example, it (and potentially the entire value chain) may be vulnerable to cyberattacks. If the white label partner were to go bankrupt, it could also be complicated and costly for a financial institution to keep the digital interface with the customer up and running and to handle claims from end-users. After all, the financial institution itself usually has no relationship with the end-users.

Many white label operators also use the services of multiple financial institutions. A failure of the white label partner could give rise to settlement problems if a comparison of two sets of financial information, such as bank statements, general ledger accounts or other relevant data from different institutions, revealed an absence or mismatch of certain information. There is also a risk of commingling of end-customers' assets, with funds being combined in such a way that they can no longer be individually identified even though they came from different sources. In the event of bankruptcy, it would then no longer be clear who was entitled to what money.

Integrity risks

As mentioned above, the embedded finance value chain is more fragmented and complex and therefore not fully controlled by the financial institution. The financial institution has neither a direct customer relationship nor access to inherently fragmented data, and hence no end-to-end view of the customer data.

¹⁹ The introduction of DORA means that firms will now be required, among other things, to identify and regularly assess the ICT risks arising from the use of third-party services. This may prove costly in terms of time and money, particularly in the case of long, obscure supply chains. Mandatory assessments of third parties mean that long value chains and complexity now come at a cost.

Firms will therefore have to rely on the white label partner to monitor and identify integrity risks.

This may result in an incomplete overview of KYC data and limit the ability to monitor and identify suspicious transactions. The financial institution may consequently be less able to gain an adequate functional view of the risks of money laundering and terrorist financing, impairing the performance of its gatekeeper role. The fact that white label operators often use multiple partner financial institutions (e.g., in the case of payment services, an institution for the custody of payment accounts and another institution to effect payments from those accounts) also leads to inherently greater integrity risks due to the resulting additional complexity – such as more administrative procedures.

Financial risks

As a result of 'outsourcing' the financial service underwriting process (insurance, lending, etc.) to its white label partners, the financial institution may find that the process is not carried out with due care, giving rise to unexpected risks. These could include credit risks or a form of concentration risk if the white label partner builds up a concentration of customer groups with the same risk profile or correlated behaviour, but the financial institution has no clear insight into this concentration. A related risk is balance sheet volatility, as the financial institution has limited influence over the volume of financial services generated by the white label partner. Disappointing results on the part of the white label partner may affect the stability of the bank's balance sheet. If a financial institution does not swiftly identify and mitigate this impact, it will incur solvency and other risks.

Banking institutions specifically face potential liquidity risks on savings attracted by their white label partners (and deposited with the banking institution). Banks working with non-bank partners to raise deposits may face liquidity risks if these partners withdraw or fail to comply with bank policies or applicable legislation. Not being in control of the customer base can thus lead to liquidity fluctuations. This is particularly true, of course, if the institution is largely dependent on these deposits.

Legal risks

Financial institutions must take relevant financial regulations into account when working with unlicensed operators. Financial institutions generally remain liable for the services provided by their white label partners. It is therefore important to ensure that white label partners comply with all legal requirements. Breaches of regulations can lead to claims or legal disputes.

Reputational risks

A financial institution's reputation may be indirectly impacted by any improper or unauthorised activities on the part of the white label partner. This could happen, for example, if the white label partner makes improper use of customer data when providing financial services. This could reflect negatively on the financial institution.

Risks to the revenue model

In embedded finance, it is not the traditional bank or insurer that has the primary contact with the customer, but the white label operator, which uses its data to determine how best to approach the consumer. The traditional financial institutions thus lose ownership of the customer relationship, making them vulnerable to a loss of business if their white label partner decides to go with another financial institution.

Looking further ahead, it is conceivable that financial services will increasingly evolve into an anonymous, standardised and possibly ever smaller component of the overall consumer purchase process on digital platforms, with financial institutions possibly receiving only modest remuneration. This price pressure will mandate further efficiencies and economies of scale and potentially put pressure on the revenue model of traditional financial service providers²⁰.

At the same time, institutions that choose not to implement this business model may fall behind the competition. Faced with outdated IT systems and conservative attitudes among financial institutions, white label operators may then choose to partner with foreign financial institutions. If this business model grows rapidly, there is a risk that some institutions will be left behind.

Risks to consumer protection

The provision of embedded financial services and products inherently involves

behavioural risks and particularly the risk of misselling. For example, the consumer may not be given sufficient clarity about the risks of the financial products and services offered by the white label partner: is the consumer being offered the right product for his needs, knowledge, expertise and risk preference, is it sufficiently clear what level of protection applies to the product, does the customer know who the underlying financial institution is, which conditions apply, does the customer know who to complain to (the white label partner or the institution) etc? These risks surrounding the careful treatment of customers fall within the mandate of the AFM.

Consequently, there is a risk that by combining regular products and services (such as a washing machine) with financial services (such as warranty insurance), the embedded finance market will develop into an opaque market with non-transparent pricing and highly personalised premiums and conditions. Hence there is a risk that the customer will end up paying too much. Furthermore, in a digital environment where the customer can purchase a financial product in a matter of seconds in combination with the purchase of a regular product, there is a risk of nudging and improper influence, leading to poor financial decisions or impulse buying²¹.

Privacy risks

The embedded finance value chain is inherently susceptible to privacy risks. After all, customer data (both financial and non-financial) is held and shared across multiple operators, entailing risks of data breaches, abuse and fraud, as well as unauthorised access to privacy-sensitive data.

Stability risks

In theory, embedded finance entails a number of potential stability risks. For example, a large e-commerce operator could gain a substantial share of the consumer finance market and thus become systemically important itself. Any problems encountered by this operator or its partner financial institution could then potentially have a significant impact on consumers. Similarly, any problems suffered by a white label operator could impact the partnering financial institution if it is significantly dependent on the white label partner's customer base. Stability risks – more than the other risks – will only materialise, however, if there is substantial growth of embedded finance in the years ahead.

Resolution risks

The high degree of interconnectivity and dependencies within the embedded finance value chain makes any resolution of the licensed institution potentially more complex and time-consuming. The high degree of automation/digitalisation also potentially complicates the use of resolution tools, such as rapid freezing of transactions (often the first step in resolution).

²⁰ EIOPA (2022), [Consumer Protection Issues in Travel Insurance - European Union \(europa.eu\)](https://www.eiopa.europa.eu/publications/consumer-protection-issues-in-travel-insurance), EIOPA (2020b), Discussion Paper on the (re)insurance value chain and new business models

²¹ AFM (2023) https://www.afm.nl/~/_profmedia/files/rapporten/2023/op-insurance-market-next-decade.pdf

6 Implications for prudential supervision

Viewed specifically from the perspective of DNB's prudential supervisory mandate, embedded finance does not currently appear to pose a direct risk to the safety and soundness of the financial institutions involved. Currently, in 2024, the scale of embedded finance in the EU and the Netherlands is not yet material, especially compared to traditional financial services.

Nevertheless, from a supervisory perspective it is important to keep an eye on the ball and look ahead to a situation where embedded finance operators do start providing significant volumes of financial services and products, with correspondingly higher risks. It is therefore particularly important that DNB continues to actively monitor the development of embedded finance in the Netherlands going forward. Disruptive innovations often start small but can sometimes grow at a substantial pace. This may also turn out to be the case with embedded finance, given the underlying structural trends. Moreover, embedded finance may potentially change the financial landscape as a result of pressure on traditional financial institutions' revenue models, the creation of more specialised (narrow) banking and insurance models and the emergence of larger and potentially more complex dependencies between financial and non-financial institutions. Not surprisingly, this subject is now also on the radar of the ECB/SSM, BCBS and recently the EBA.

If white label operators continue to develop and become more significant, they may eventually apply for financial services licences themselves (e.g. under pressure from supervisory authorities or to facilitate further growth), develop their own infrastructure and thus fall within the scope of supervision. Equally, white label operators may consciously choose not to apply for a licence precisely in order to avoid regulatory pressure, with the result that potential risks remain partly outside the supervisory authority's field of vision.

While monitoring is particularly important at this stage, various supervisory actions could be taken to mitigate the risks associated with embedded finance. Far-reaching supervisory measures do not seem opportune or proportionate at present, however. Supervisory measures could range from imposing reporting requirements on financial institutions involved in embedded finance, requiring financial institutions to meet higher risk management standards for embedded finance and increasing the transparency of embedded finance activities (not only in the financial institution but also in its white label partners) through to imposing higher capital requirements on financial institutions for embedded finance activities and ultimately bringing certain white label operators within the scope of supervision.

There are various factors to take into account when considering the introduction of any further supervisory measures. These include the further growth and size of this market (in terms of volumes, number of operators involved, etc.), the associated increase in the complexity of the value chain, the extent to which the financial institution manages the risks associated with embedded finance and particularly the specific division of responsibilities between the licensed financial institution and its white label partner(s) with regard to financial services. On the latter point, how far do the white label partner's powers extend in practice with regard to the embedded financial services? For example, to what extent does the white label partner actually take charge of assessing and accepting a loan or insurance application or approving the opening of a payment account, etc?

As the role of the white label partners grows, the underlying financial institutions will have less control, so white label partners should have greater responsibility for the risks associated with customers and a greater duty of care/liability towards them. More far-reaching supervisory measures would then seem to be opportune.

Lastly, embedded finance is a cross-border phenomenon and therefore merits an international approach from the perspective of a level playing field and preventing supervisory arbitrage. A white label platform in Germany, for example, could enter into a partnership with a financial institution in the Netherlands and vice versa. DNB is actively engaged in the growing debate on this subject among the relevant international supervisory bodies.