PwC Study – March 2019

Platform Banking & Digital Ecosystems

Cooperation with third-party providers as an important factor for providing a wide range of services and products

Partnership establishment in the German banking market remains on a high level – mainly focused on improving the banks' product offering

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Platform Banking & Digital Ecosystems – What you will find inside our study

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A lot has been written about the relationship between FinTechs and Financial Institutions, where the trend has shifted from 'foe' to 'friend'. For example, the PwC Global FinTech report 2017 states: "82% of incumbents expect to increase FinTech partnerships in the next three to five years".

Banking partnerships can go beyond collaborating with FinTechs. Therefore we researched all partnership announcements between banks and Third Party Providers between 2012 and 2018 for the German market. The aim of this research is to shed light on the increasing importance of partnerships for banks to realize their strategic agenda, and how banks can make partnerships and ecosystems work for them.

The publication resulting from our research consists of three parts. In this first part we describe the market dynamics that we observe based on public announcements. In the second part, we discuss the new banking ecosystems and provide guidance how banks can strategize in this new reality. In the third part, we discuss learnings from previous engagements that we did around partnerships and present guidelines how banks can start on making ecosystems work for them.

Platform Banking & Digital Ecosystems – Our study provides an overview of the partnerships with TPPs

Previous Research

- PwC-Publications 2018: FinTech-Kooperationsstudie “Cooperate instead of compete” (06/2018); FinTech-Kooperationsradar (10/2018).
- PwC-Publications 2017: Global FinTech Survey 2017.

Goals

- Provide information on the different kinds of innovative partnerships of Financial Institutions with Third Party Providers (TPPs), including FinTechs, as well as more established companies.
- Create a comparison between partnerships in the German market and those in the Dutch market, for which a similar study has been conducted, to find information about differences and similarities in both markets.

Time Period Considered

- We considered the time period up to the end of 2018.
- The information volume was better, the closer one got to the present.

Source of Data

- The sources of the data were publicly available information on and announcements of partnerships in German and English, available in newspapers, websites of the banks or the TPPs, financial forums, online data bases, etc.

Research Focuses

- The following topics are considered in the study:
  Year of partnership establishments, equity-relationship, service sectors in which partnerships were established, strategic goals of the partnerships, and partnership design.

Analysis

- With the help of the data different coherences and commonalities between the different partnerships have been found; the results are presented graphically in the following.

Platform Banking & Digital Ecosystems – Key findings of our study

1	The main strategic goal of banks to involve in partnerships is to improve their product offering in regard to both retail clients and corporate clients.
2	With regard to Banks‘ traditional areas of activity, there is a growing saturation concerning retail and corporate banking business; New partnerships focus on “Beyond Banking” solutions which emphasizes the transformation of banks towards solution providers that are able to provide services beyond the scope of traditional banking services.
3	Different forms of partnerships (e.g. white labeling, outsourcing) can be observed between banks and FinTechs – however, there is a trend towards API integration of banks‘ and FinTechs‘ infrastructure.
4	Especially Challenger Banks promote their solutions in terms of „Platform Banking“ by using API-based product offerings.
5	The trend towards setting up new partnerships in Germany further remains on a high level, while it continues to rise in the Netherlands.*

* In Germany only the most prominent banks were observed. However the Hypo-Vereinsbank withdraws from German FinTech market since 2018. Assuming that the HVB would have continued to cooperate with FinTechs, the increase in Germany would have been clearer.

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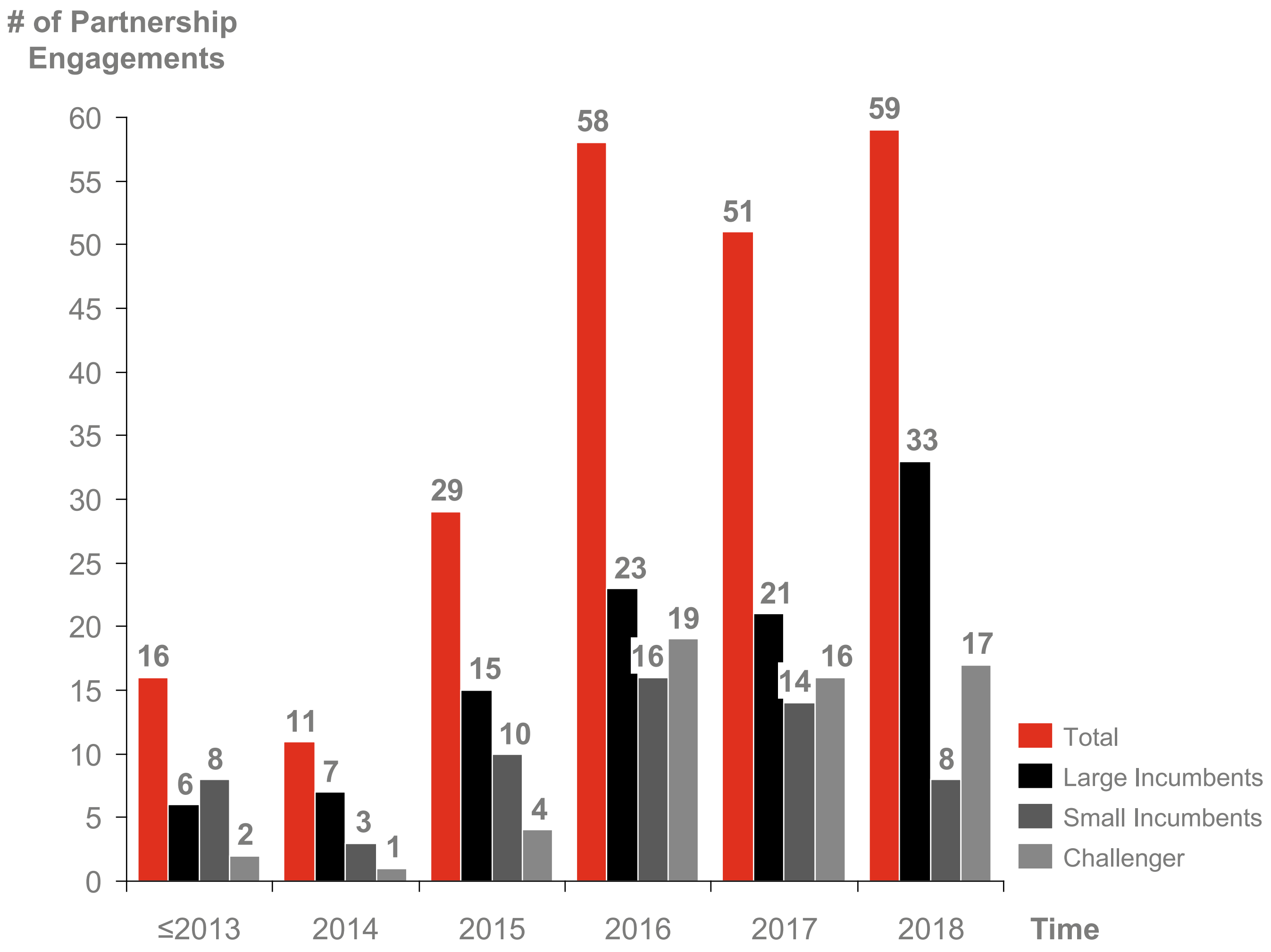
Key Findings

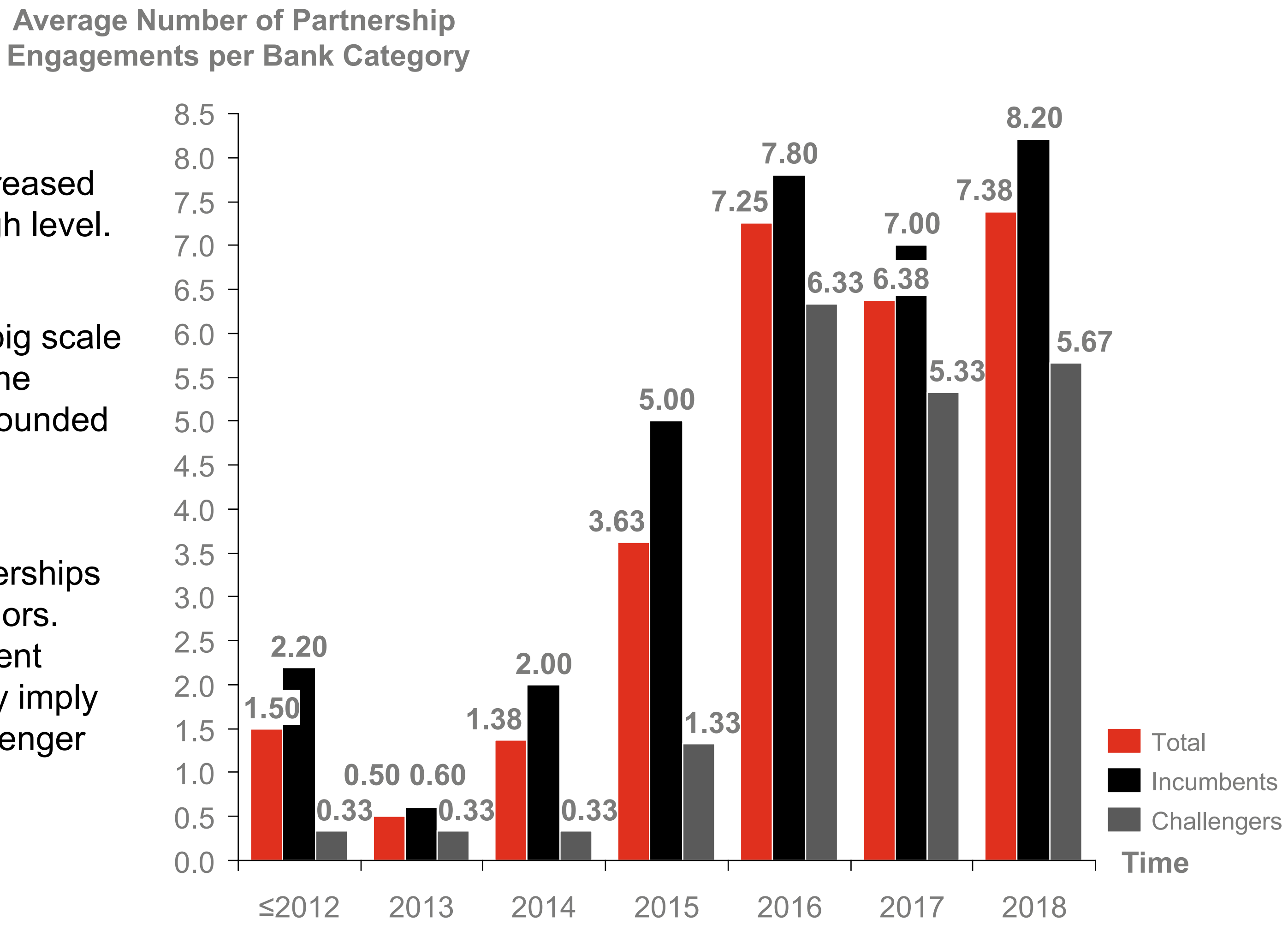
The number of new partnerships concluded by Challenger Banks has developed similarly to that of Incumbent Banks

- In total, Incumbent Banks concluded more partnerships than Challenger Banks – which is mainly due to the larger number of Incumbent Banks in this study.
- Until 2016, a strong increase in the number of new partnerships was observed.
- Afterwards, the trend flattened out – however, there is still a high level of new partnerships.
- It is likely that in the last 2 months of year 2018 additional new partnerships will be established or the existence of already established new partnerships will be disclosed.
- Possible reasons for the decrease in number of new partnership announcements:
  - The UniCredit Bank (HVB) has withdrawn from most of its investments in 2018 and since then did not participate in new partnerships.
  - This research was focused on the “big players” in the respective bank categories. It can be assumed that these banks started concluding partnerships earlier than other banks and therefore have reached a certain degree of saturation. Minor banks, which may be following the trend and may currently still be in the process of expanding their partner-ships, were not included in this research.



Partnership establishment in the German banking market currently remains on a high level

- Generally, Incumbent banks entered into more partnerships than Challenger banks did.
- Until 2016, the number of newly founded partnerships increased rapidly, whereas from 2016 until 2018 it remained on a high level.
- Challenger banks started to engage in partnerships on a big scale in 2016. The numbers are partly also due to the fact that the Solaris Bank, which entered into many partnerships was founded only in 2016.
- A relatively large proportion of the challenger banks partnerships in 2017 involves partnering with accounting software vendors. The majority of these vendors also partnered with incumbent banks in the years prior to 2017. This does not necessarily imply that incumbents are ahead of the curve compared to challenger banks as illustrated by the example below.



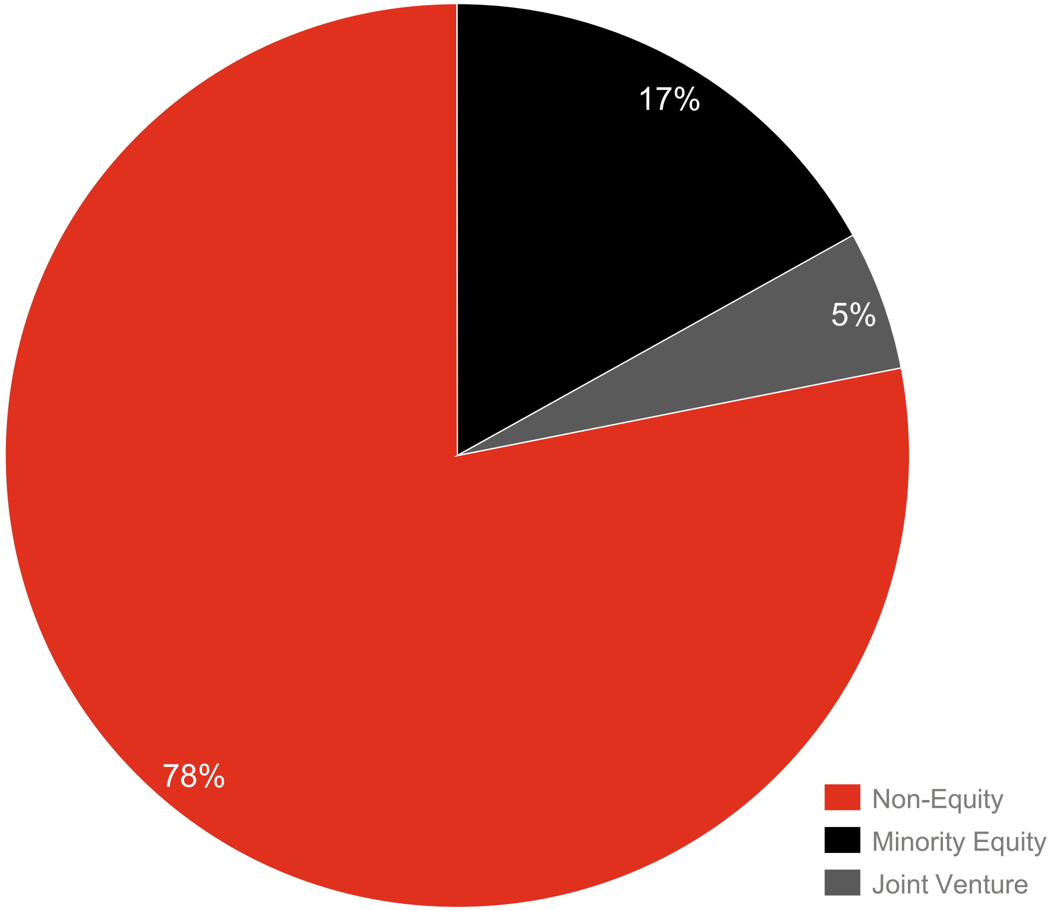
Non-equity partnerships clearly outweigh equity partnerships

- The number of partnerships without equity participation of banks clearly exceeds the number of partnerships in which banks have acquired shares of their partners.

- In case of partnerships with financial participation from banks, the outstanding role and high expectations regarding the future of the partner company were often emphasized.

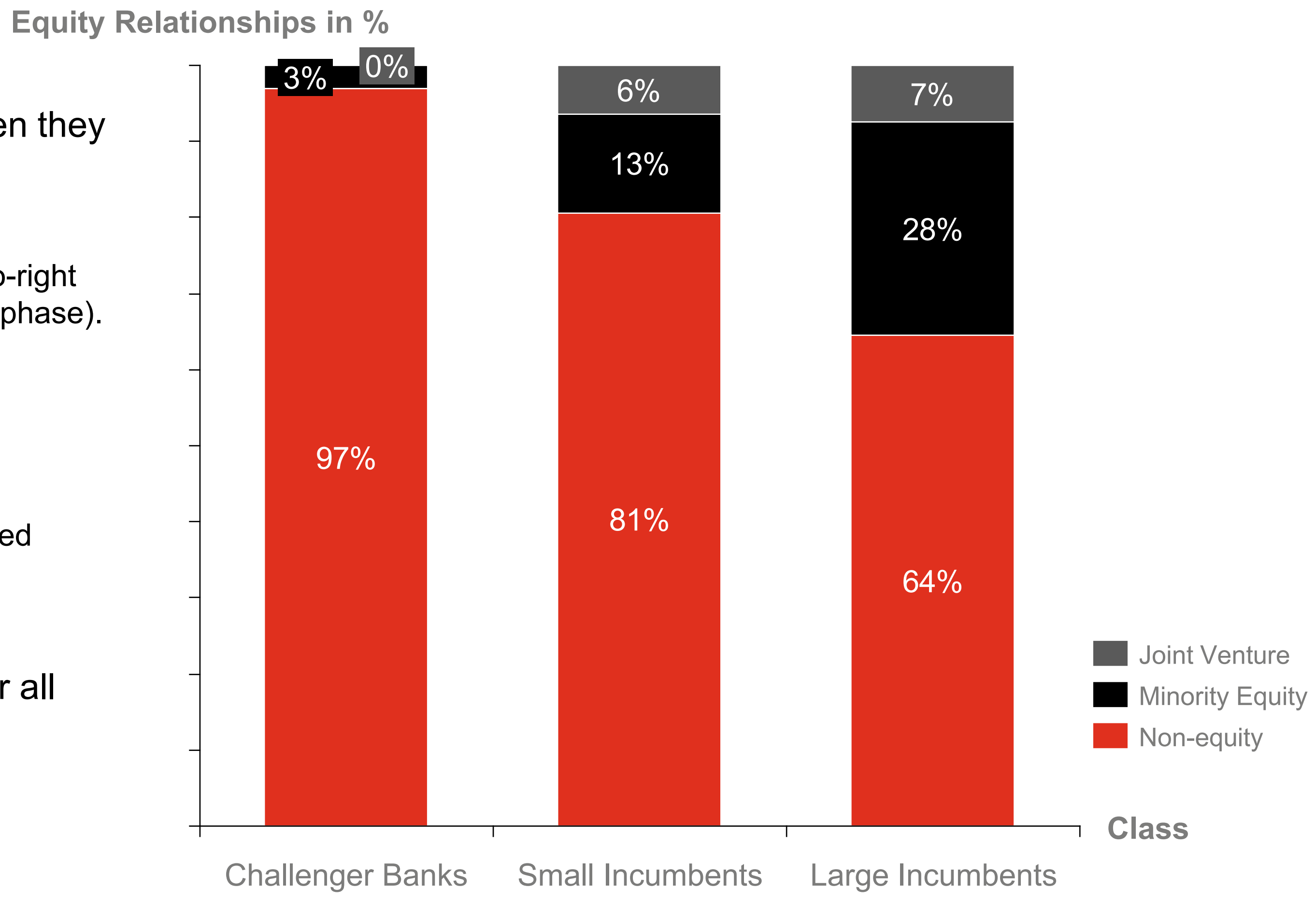
- This leads to the conclusion that banks primarily invest in their partners if, in addition to the relevance of the offered services for their own business, banks also believe in the long-term success and potential market dominance of their partner.

- Please note that full acquisitions and sponsorships are not considered relevant partnerships for this study and are thus excluded.



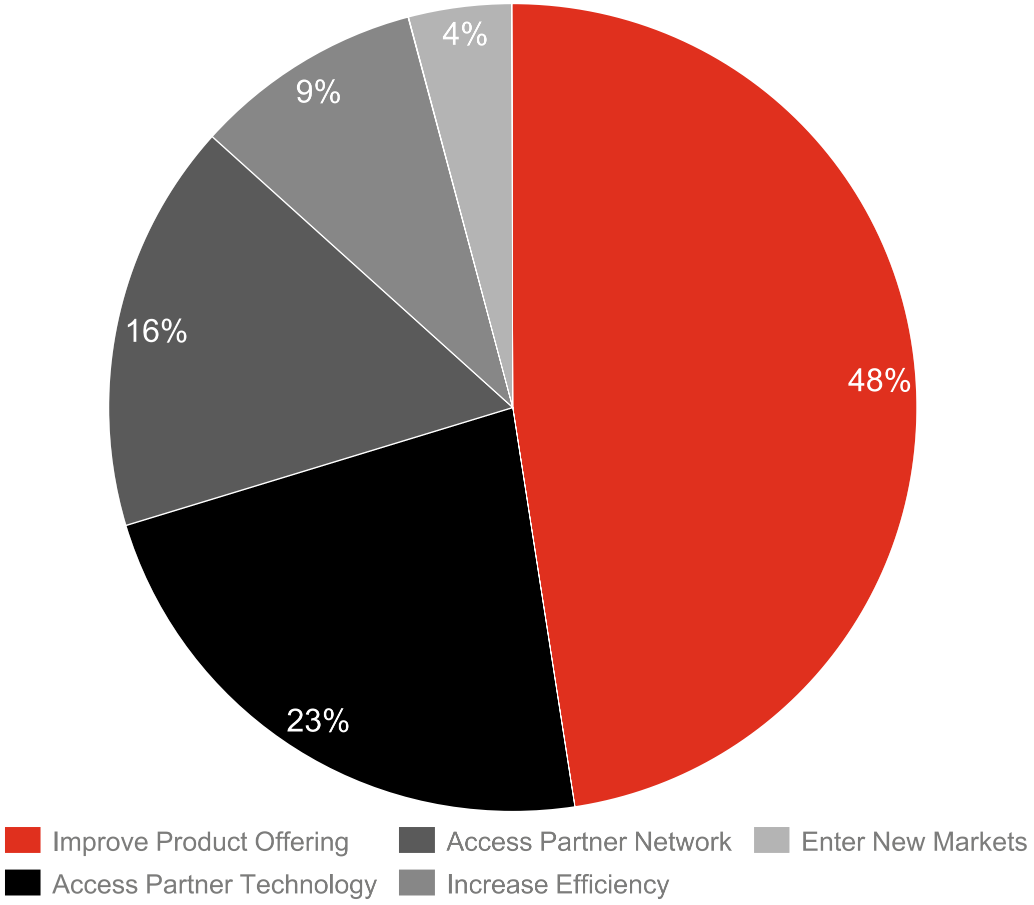
Non-equity partnerships are predominant among Challenger Banks as well as Incumbent Banks

- The larger and more established banks are, the more often they invest capital in their partners.
  - Incumbent Banks have more investment capital available.
  - For large banks it is important to have an active role and/or veto-right during decision making (e.g. in regard to the commercialization phase).
- Challenger Banks rarely enter into equity partnerships.
  - Challenger Banks have only limited investment capital.
  - From a strategic point of view, the cooperation with a self-directed FinTech is preferred.
- Nonetheless, non-equity partnerships are predominant for all types of banks.
  - Higher degree of flexibility (e.g. in regard to exit-option).



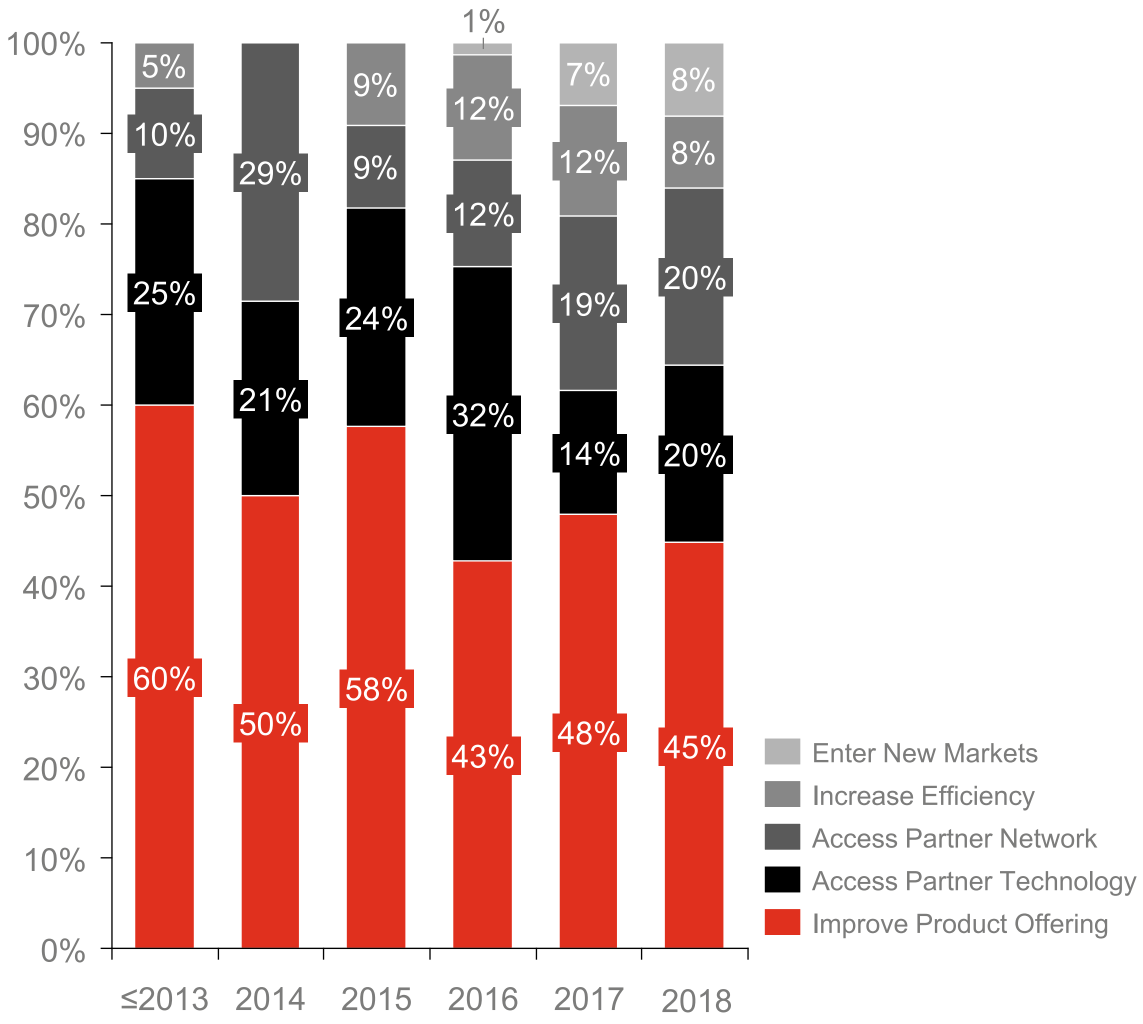
Offering new products or further developing existing products is the reason for almost half of all partnerships

- Offering FinTech services improves quantity and quality of the products provided – which helps to retain the bank's customer base.
- In about a quarter of the cases, the bank enters into partnerships with companies whose technology would be too difficult for the bank to produce itself.
- The partnerships that banks enter into in order to get access to the network of partners are mostly about the existing the partners' customer base.



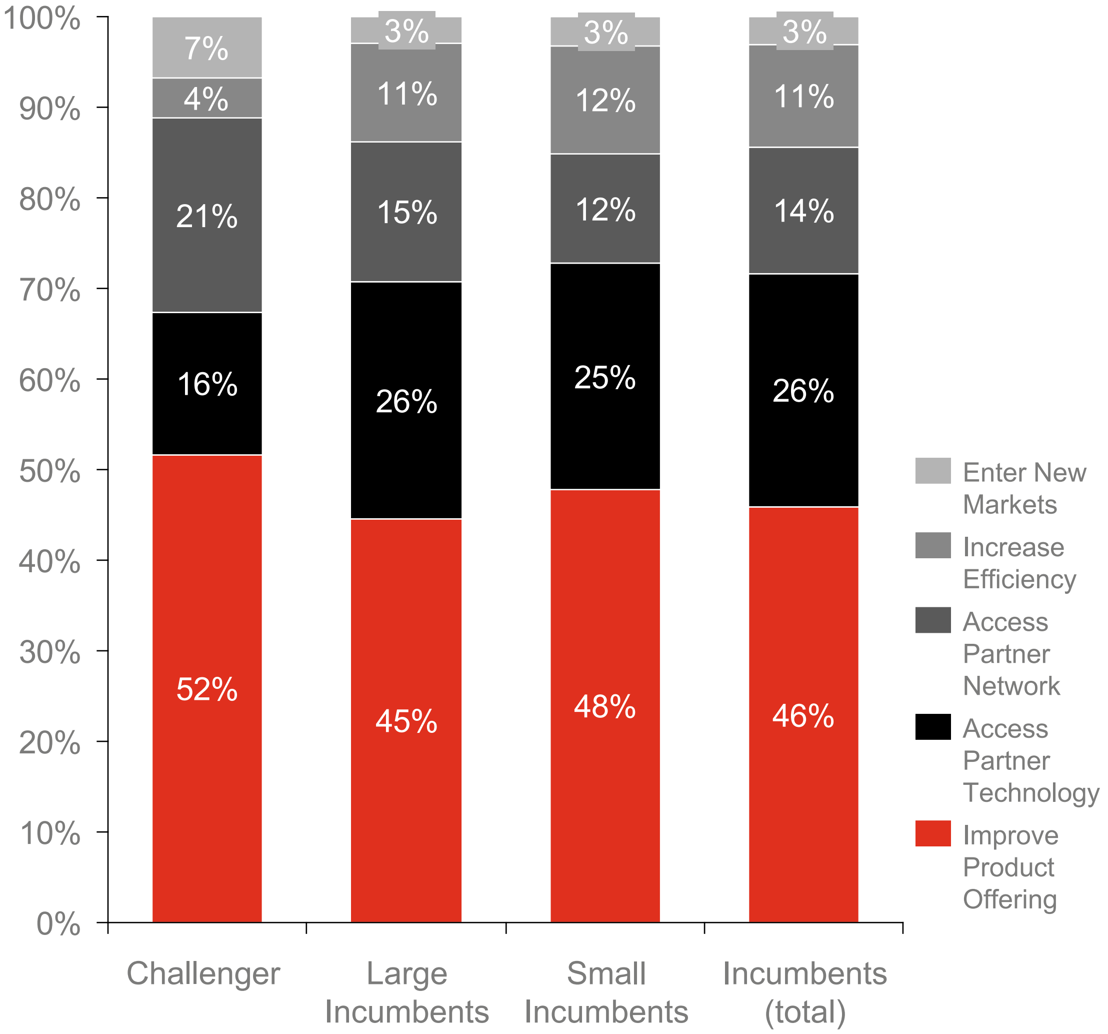
In the past few years, improving the product offering was the dominating goal of many partnerships

- Looking at different periods, the most important reason for entering into partnerships was the improvement of product offering.
- Nonetheless, the proportion of partnerships designed to improve product offerings tends to decline as efficiency gains and entry into new markets become more important.
- Example for Enter New Markets:
  - Digital international loan marketplace (loan securitization)
  - Digital issuance of bonds to finance small and medium-sized enterprises
- Example for Increase Efficiency:
  - Digital credit process: from application to loan approval (e.g. no post-ident procedure is needed anymore)
  - Analysis of unstructured data, which is in line with compliance requirements
- This development is in line with the development of a platform economy which is also characterized by access to international markets and the development of new product/market combinations.
- It remains to be seen to what extent this development will continue in the future.

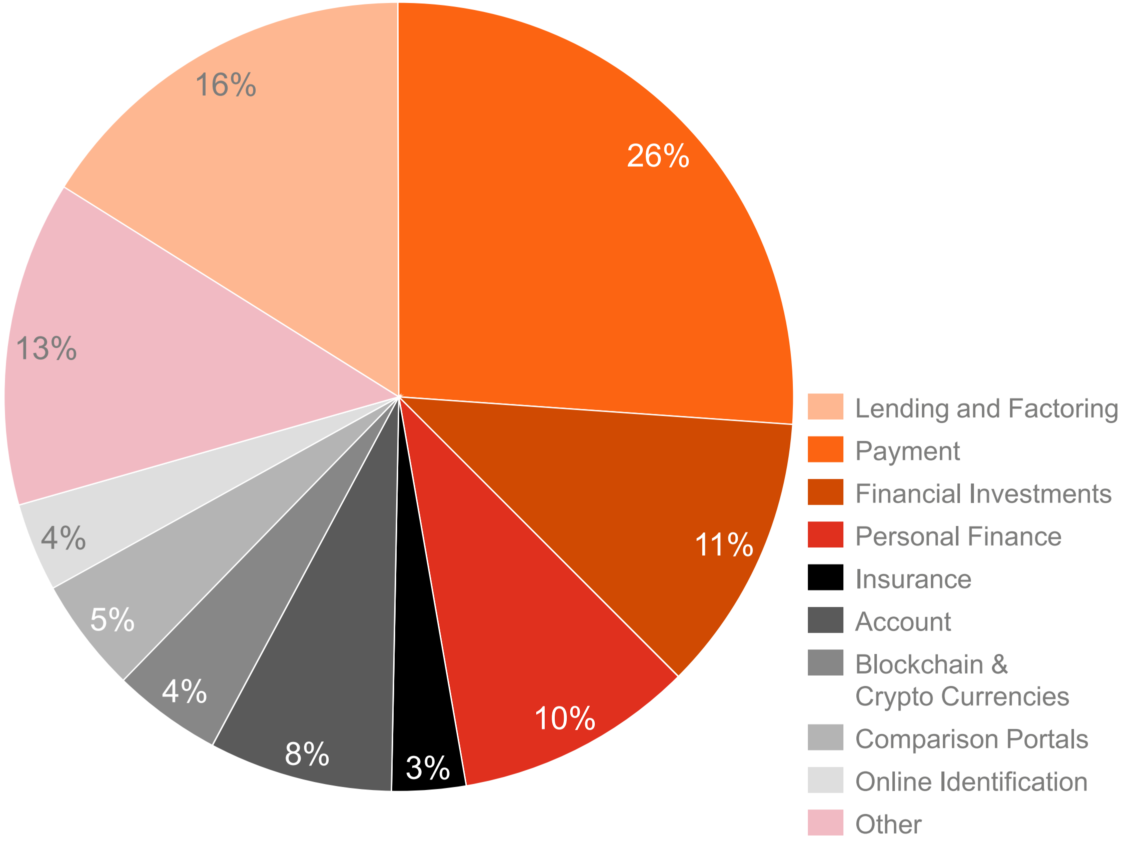


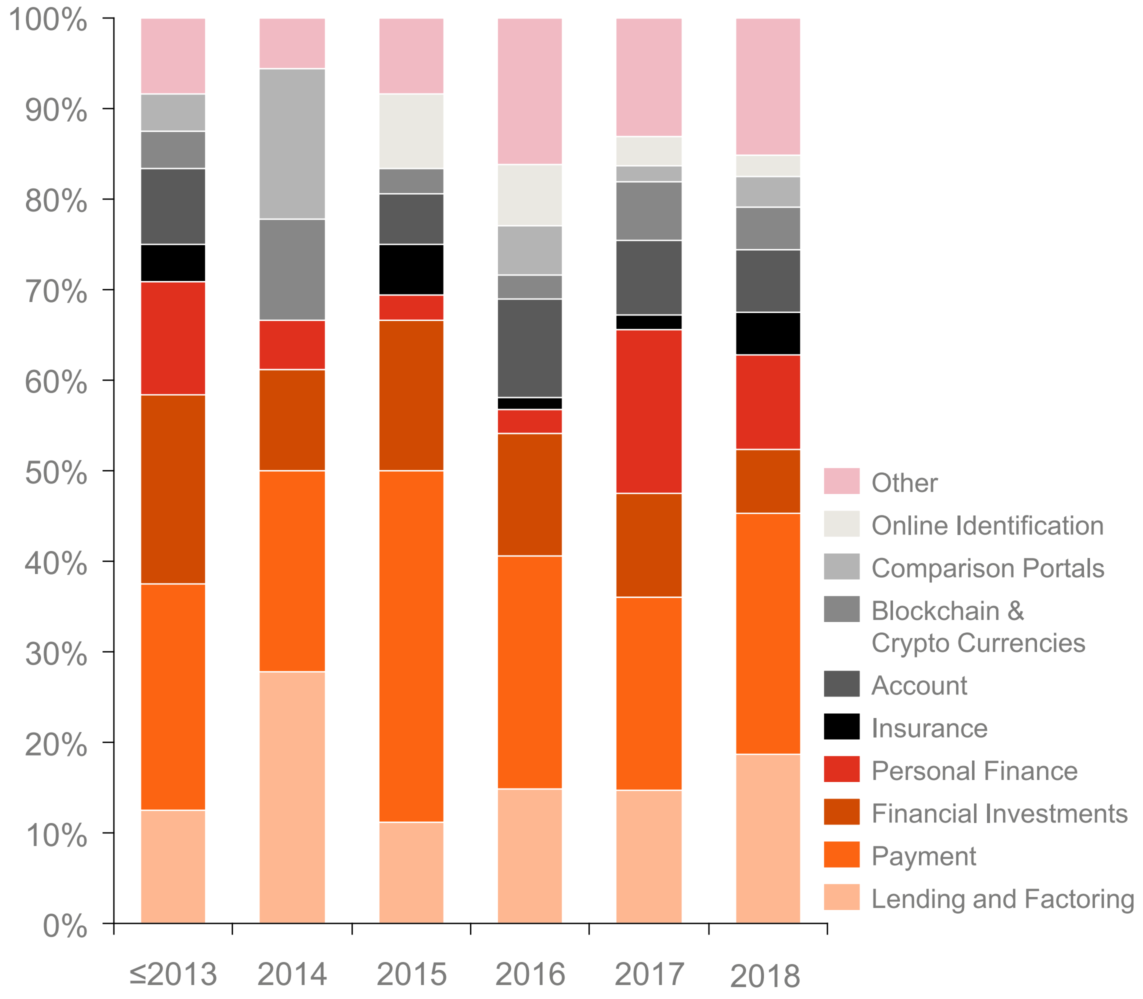
The strategic goals of the different bank categories are similar to each other

- The separate consideration of Challenger, Large and Small Incumbent Banks strengthens the statement that the primary reason for entering into a partnership was to improve product offering.
- Regarding the Incumbent Banks, the proportion of partnerships which allows access to the partner's technology was slightly higher.
- "Legacy IT systems" at Incumbent Banks are typically not or only partially prepared to meet today's digital requirements. With a partnership, innovative software solutions from FinTechs can be accessed.
- Challenger Banks' online operations require a modern software and IT environment. Compared to Incumbent Banks, the focus is less on partnerships designed to provide access to new technologies. Thus the focus can be more on developing partnerships to improve product offerings.



Most partnerships were concluded in the service sector Payment, followed by Lending & Factoring, and Financial Investments (1/2)





Most partnerships were concluded in the service sector Payment, followed by Lending & Factoring, and Financial Investments (2/2)

More than half of the partnerships surveyed focus on traditional banking services:

- **Payments (26%):**
  - Mobile Payment Services: Text recognition (transfers), payments via App
  - Commercial Payment Systems: iPad-Cash Register System, Payment Terminal via App

→The Payment Service Directive II (PSD2) gives access to Incumbent banks' client information, therefore reveals new business opportunities for FinTechs, and hence increases competition in the market. The Incumbents are aware of this threat and want to benefit from the FinTechs' innovativeness by establishing partnerships.

- **Lending & Factoring (16%)**
  - Crowdfunding is one of the most present topics concerning Lending & Factoring. The Focus is not only on providing solutions for retail clients but also on providing solution for medium-sized companies.

- **Financial Investments (11%):**
  - Partnerships with FinTechs enable banks to offer digital asset management or digital investment advisory solutions (e.g. Robo-Advice).

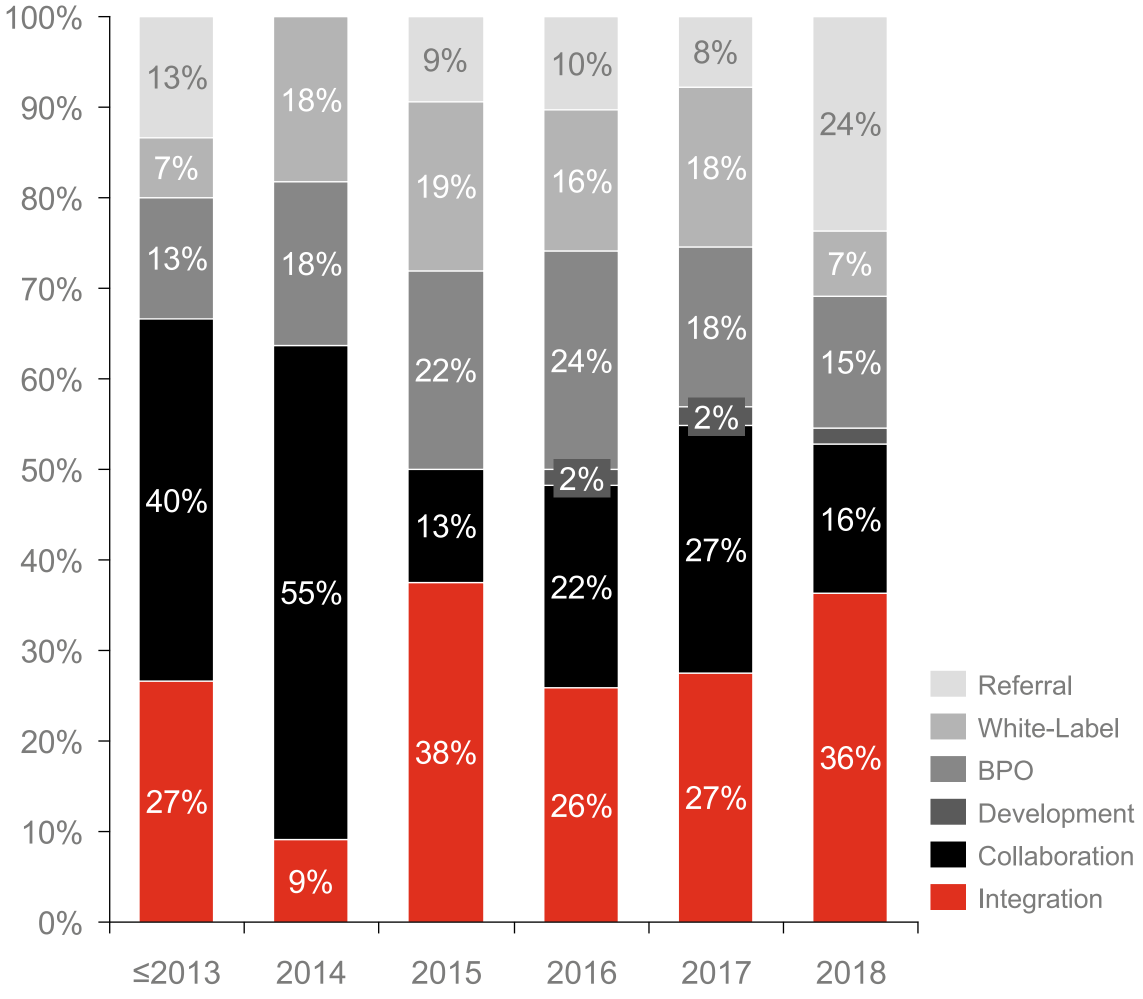
On the other side, partnerships also aim to provide products and services beyond the traditional banking services:

- **Beyond Banking:**
  - Development of a bank from product provider to solution provider, i.e. also for topics beyond the current banking business:
    - Accounting-/Tax-Solution for corporate clients
    - Data-Analytics-Tools for retail clients
  - The additional service offering strengthens costumer loyalty because the demand can be served directly by the bank and customers have no incentive to switch to another provider.
  - As a result of the partnerships, it is not necessary for banks to invest internal resources in developing such new services.
  - The expansion to a distribution platform may influence the bank's brand recognition positively, which simultaneously represents a sales-promoting factor.
  - According to the "PwC-Kooperationsradar" 60% of future partnerships between banks and FinTechs focus on "Beyond Banking".*

*FinTech-Kooperationsstudie „Kooperieren statt konkurrieren – FinTechs und Banken kommen zusammen (Juni 2018)

The importance of API integration remains very high, that of Referrals is increasing, while that of White-Labeling and Outsourcings is decreasing

- It can be expected that the trend of partners accessing the banks' infrastructure as the basis for the their own business (API integration) will continue. Possible Reasons:
  - Banks take over activities for which a banking license is required but are barely visible to the customer.
    - Example: When a FinTech offers lending services, the loan is ultimately provided by a partner bank.
  - FinTechs are no longer mainly interested in product partners, but also in service providers concerning the IT infrastructure or even back-office activities.
- Almost half of all API integrations result from partnerships with challenger banks which focus primarily on product solutions that are easy to implement with the respective cooperation partner.
- Since January 2018, the Payment Service Directive 2 (PSD2) has been in effect and acts as an additional catalyst concerning API Integration.
- The trend to integrate third-party services as white-label solutions into bank's own portfolios or to outsource certain processes to external service providers is decreasing, whereas banks increasingly refer their customers to partners for services that they themselves do not (want to) provide.



Deep-Dive: Application Programming Interfaces (API)

What are APIs?

- APIs are either stand-alone software packages or connected to existing systems.
- They are used for communication (using the internet as communication channel) between (software) applications.
- An API is a communication point that can be addressed by others to obtain or provide certain content.
- “OpenAPI” can be accessed by anyone who wants to integrate the services of the API into their own system.
- “PrivateAPI” can be accessed for internal company use or between partner organizations.

Advantages of API:

- APIs enable the integration of digital products and services into exiting IT systems so that they can be used by others.
- APIs enable FinTechs to offer banking services without acquiring a banking license or investing in the development of a banking infrastructure.
- Products and services are available on demand:
  - No waiting times
  - No branch visits necessary
- Increase cross-selling potential by integrating banking services into non-banking applications.

Examples of offered services:

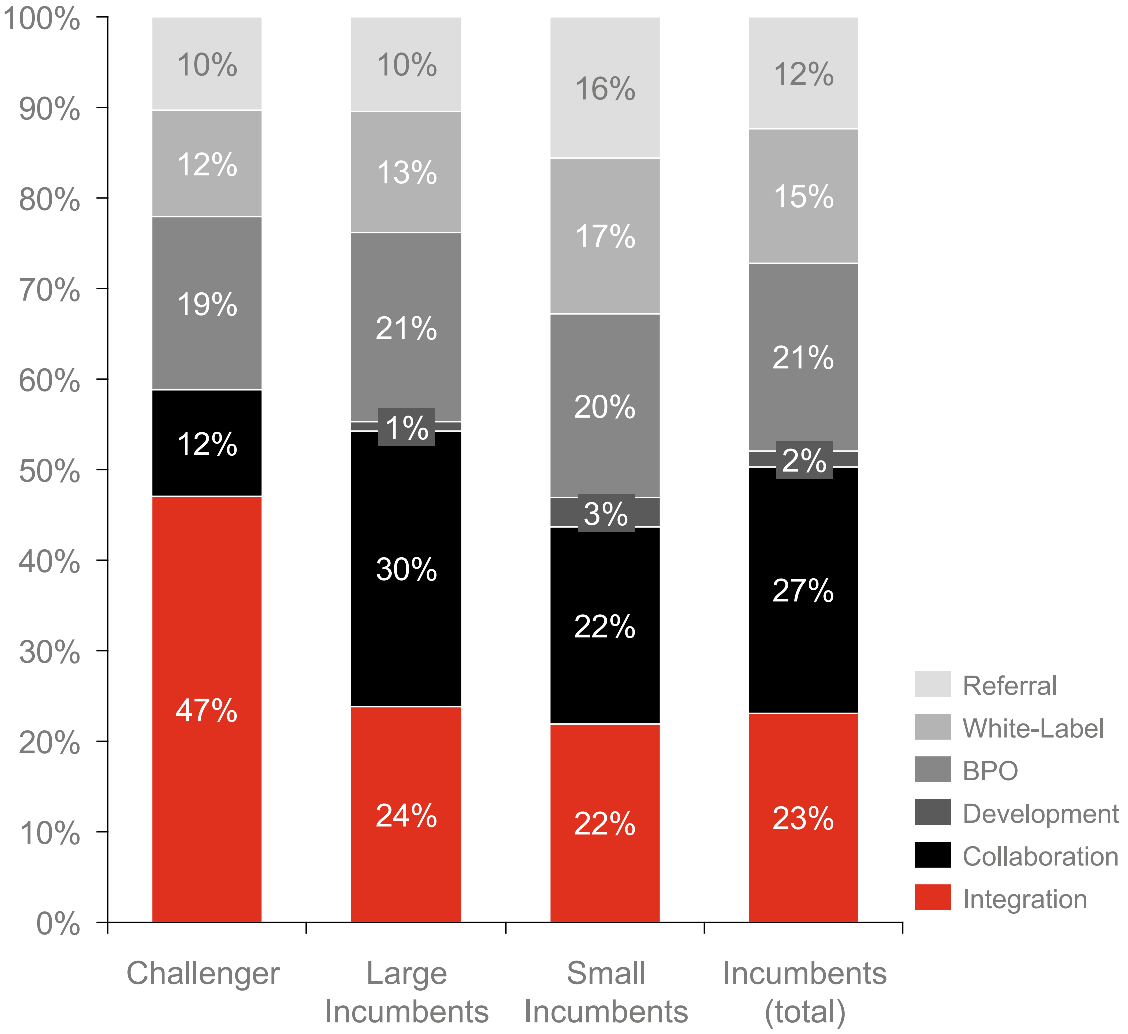
- Aggregation of Financial Sources
- Access to Accounts (XS2A)
- PSD2 compliant implementations
- Account Information Services (AIS)
  - Enables fully automated retrieval of account information from the account-holding bank in order to present transaction data in a user-friendly, categorized and clear manner.
- Payment Initiation Services (PIS)
  - User can use an online banking access to initiate a transfer without interacting directly with his bank.

Challenges:

- Banks keep access to their own IT closed (integration into banks' own IT systems is necessary).
- Deutsche Bank, Commerzbank and the “Sparkassen” work on their own API platforms.

Partnership structures differ between Incumbent Banks and Challenger Banks

- In about half of all partnerships of challenger banks, partners receive direct access to the bank's infrastructure. Possible reasons:
  - Online based business models go hand in hand with a higher customer affinity towards integrative solutions. A key service of challenger banks, for example, is providing API interfaces.
  - The corporate structure and digital corporate culture of challengers banks are close to FinTechs and are favorable for the decision to enter into a partnership in the form of an API integration.
- Incumbent banks focus more on the development of new products or on improving existing ones in cooperation with the respective partners. The share of API integrations is only about half as high as that of challenger banks, which can be attributed to a greater degree of "reluctance" to grant access to the bank's internal IT infrastructure and probably a less modern and innovative mind-set.
- The proportion of partnerships with the purpose of process out-sourcing does not differ significantly between challenger and incumbent banks.



Banks can act as one-stop financial service providers to strengthen their competitiveness and generate new sources of income

Example – Insurance:

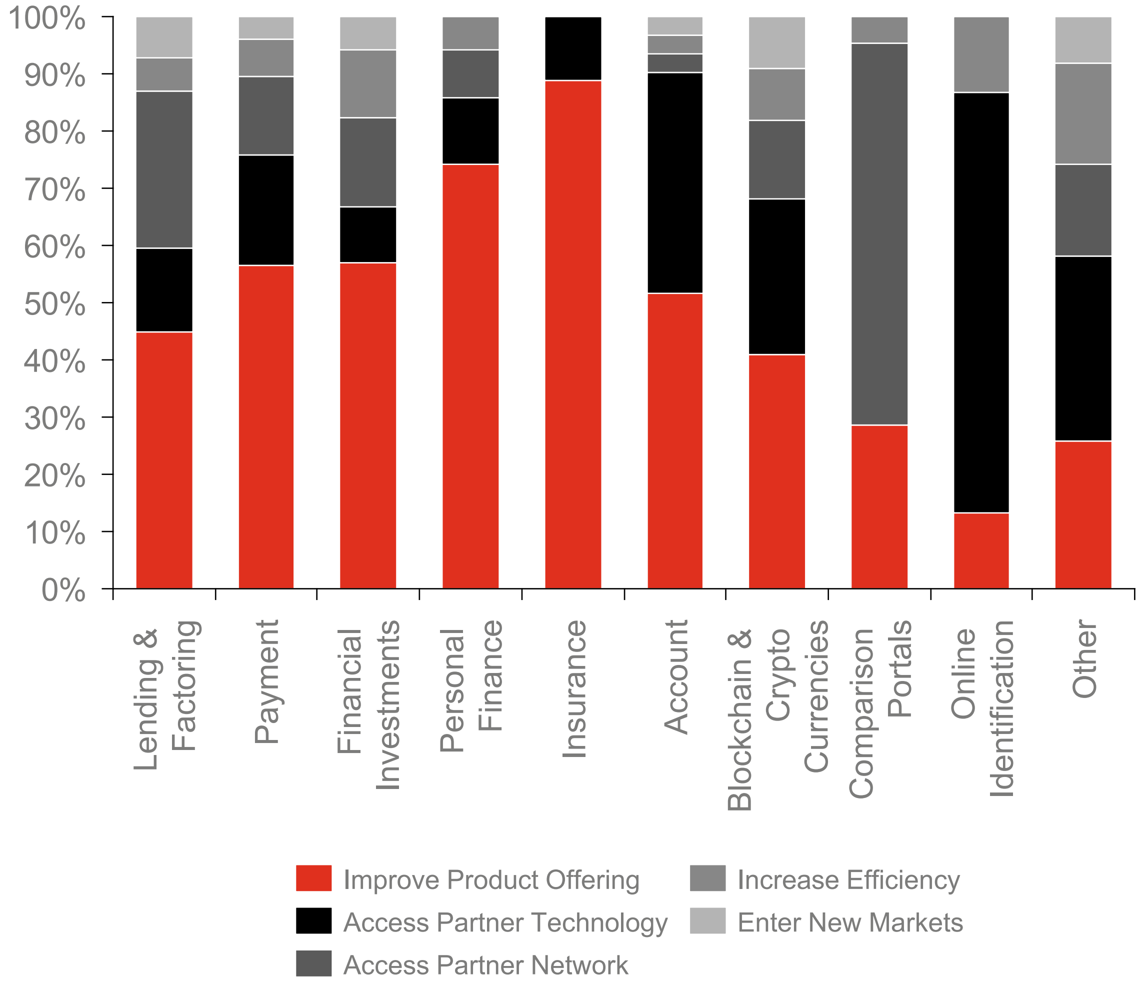
In a partnership, banks have the opportunity to...

1. ... offer insurance products for the first time (e.g. cooperation between challenger bank N26 and insurance broker Clark).
2. ... expand the existing range of insurance products, as they can partner up with several insurers. Thus, the customers can be advised more purposefully.
3. ... save costs, since the consultation, the closing and the portfolio management can take place digitally.

Example – Personal Finance:

Realization of individual offers for different customer needs – e.g.:

1. Tools for analysis of account turnover to improve liquidity management for private customers (“Haushaltsbuch”).
2. Individual offers (e.g. cheaper energy providers) based on evaluation and analysis of account transactions.
3. Automated handling of subareas in the tax declaration.



Depending on the service sector, the preferred form of cooperation varies

Example – Online Identification:

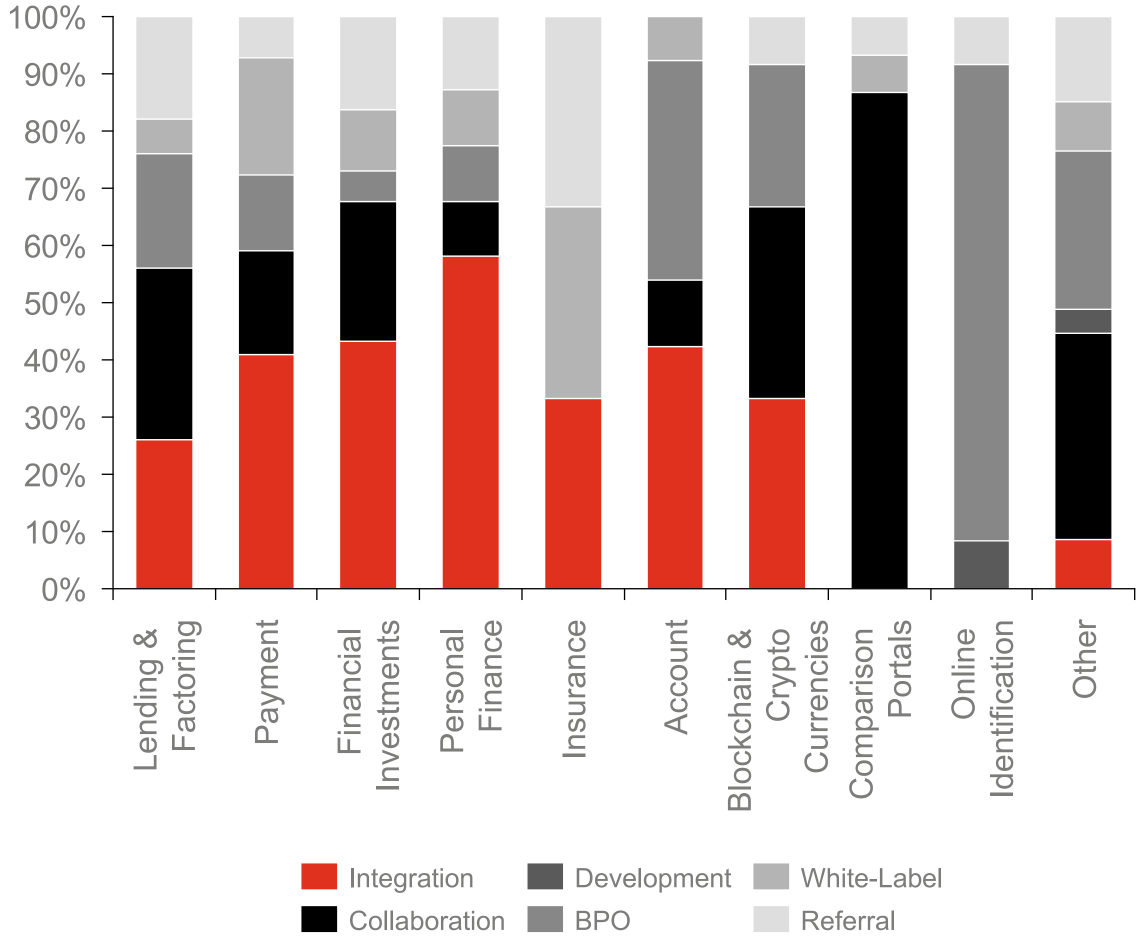
- The whole identification process that is needed, for example for opening a bank account, can be outsourced to Online Identification providers. They enable a successful identification process in often less than 10 minutes without the need of a branch visit by the customer.

Example – Account:

- In particular, account switching services are outsourced because the German payment account law (Zahlungskontengesetz - ZKG) promotes a standardization of these processes.

Example – Personal Finance:

- High level of integration, which allows the query and analysis of customer-related data on an individual level.
- Drivers on the regulatory side are PSD2 and on the technical side the further development of API interfaces.



Future-proof banks connect to partners to be able to offer customers the best products and services available in the market

- Partnerships are growing in importance for all types of banks (incumbents and challengers), with the main goal to improve their product offering, or to access TPPs' technology.
- Banks provide TPPs the possibility to scale, by allowing access to customers, funding or associating their trustworthy brand. In return, TPPs provide banks access to their specialized products, services and/or specific innovative technology, thus enabling banks to meet the bar of heightened customer expectations and demands.
- The main structures used in partnerships are integration and collaboration. When studying these main partnership structures, the common denominator is that an IT connection between the bank and the TPP is an important factor for success.
- Besides legal and compliance related issues, this poses a huge challenge in many partnerships: How to connect on-premise legacy IT systems of a bank to open and state-of-the-art IT infrastructure of TPPs without endangering the stability and security of the banks' IT systems?
- The legacy aspect mainly holds for incumbent banks, but also challenger banks need to find a way to connect TPPs to their IT infrastructure without necessarily making them part of their landscape.

- If German banks want to grow, they need to improve their product offering more than ever. Market growth in the banking sector will be flat or decline in developed economies as the population ages and more liquidity is provided outside the banking system.
- To be fit for growth, banks should let go of the – disrupted – idea of a vertically integrated bank and view banking as an ecosystem of partners.
- Growing traction in the number of partnerships shows that the market is ready. To be successful, it is up to bank leadership to decide where to play in this new ecosystem, design their strategy accordingly and partner-up.

- In addition, 'power' is shifting from financial institutions towards the consumers, whose experience is driven by state-of-the-art customer experiences outside the sector like for example Uber, Spotify or Facebook.

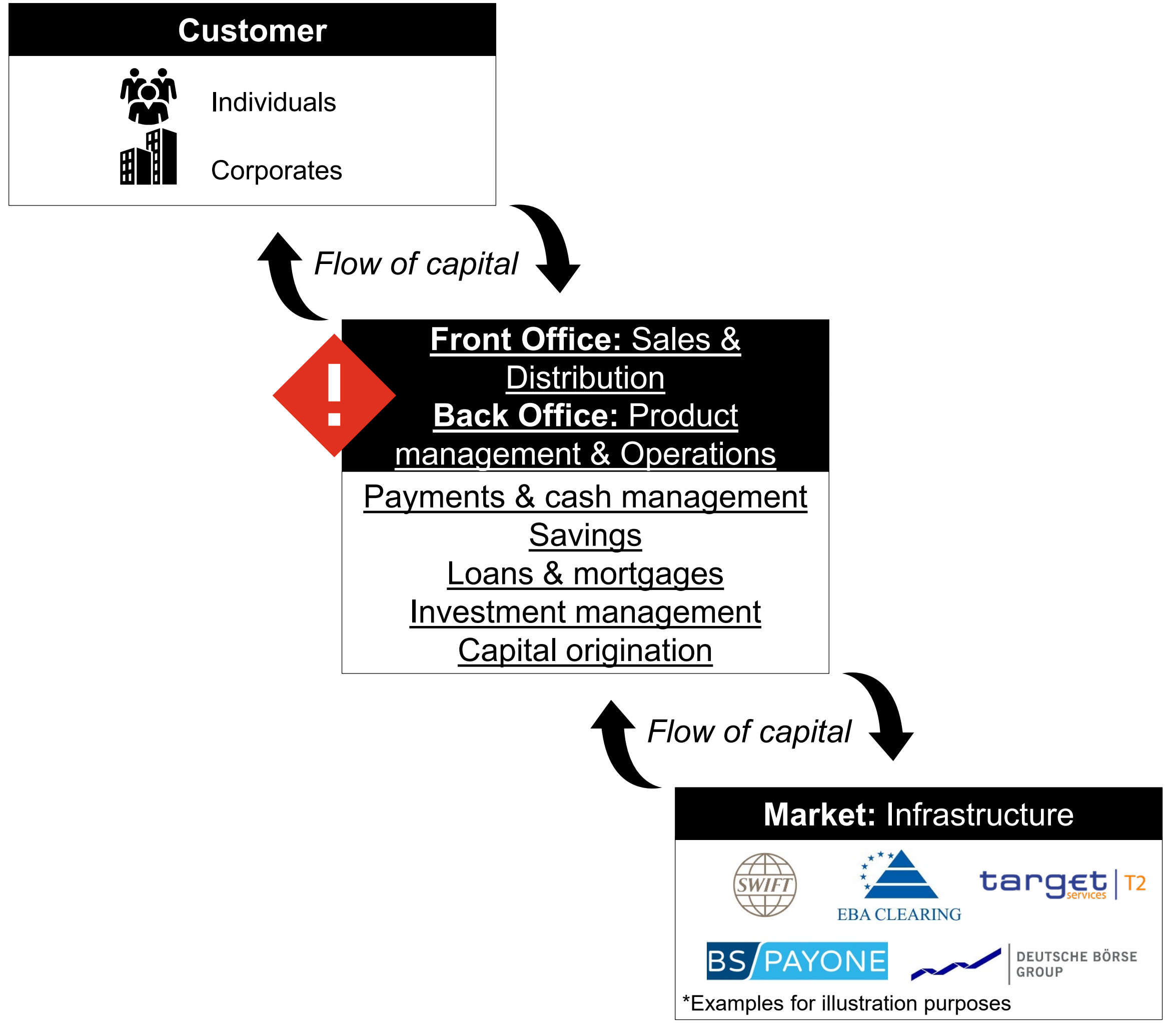
2

Future of Banking

Different plays in the new Banking Ecosystem

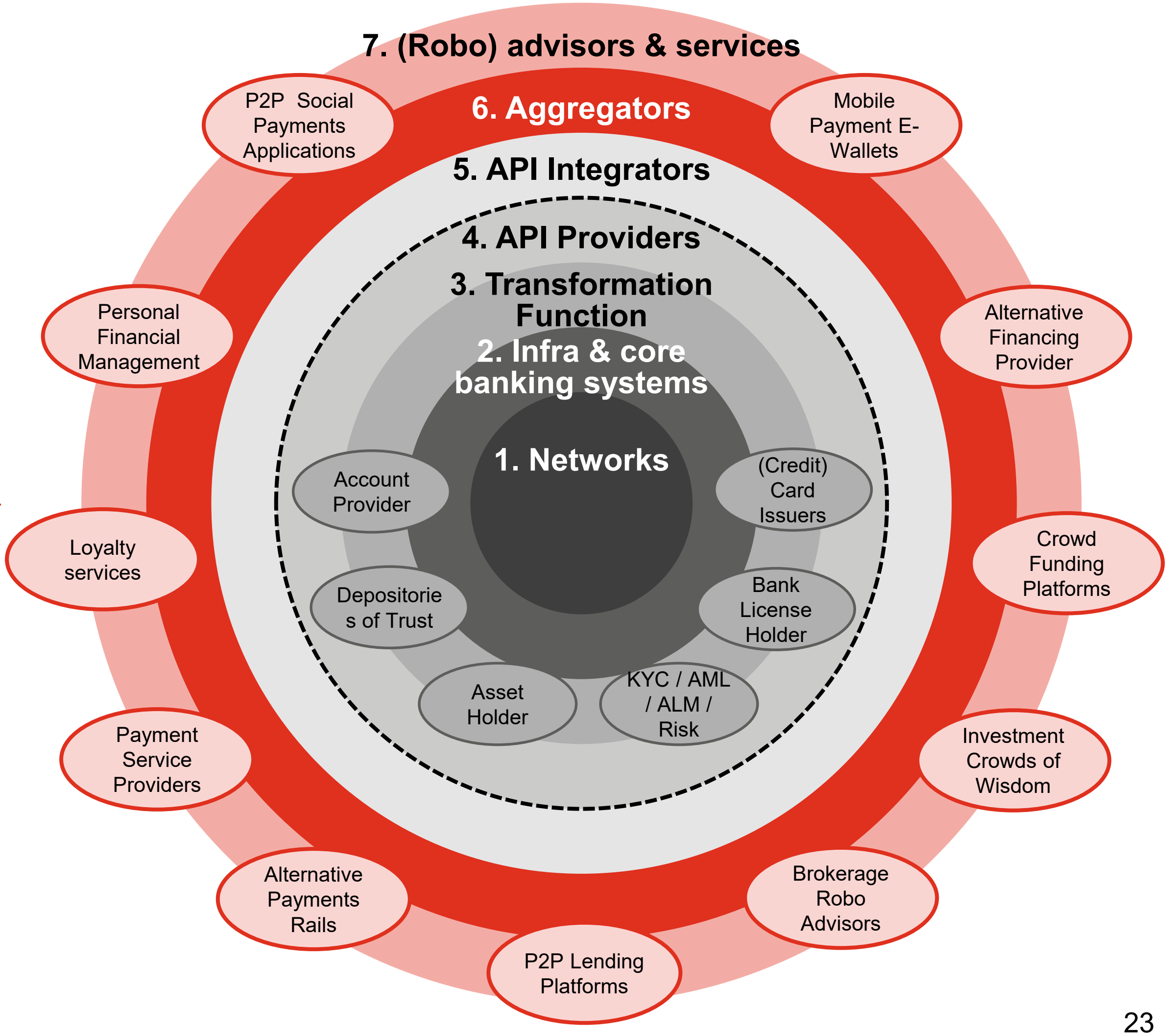
Vertically integrated companies called banks are disrupted by three trends

- Banks used to be vertically integrated companies, offering individuals and corporates a variety of financial products/services and being the link between them and the financial market (infrastructure). Banks used to own the customer across the financial chain as well as to use their data in sales, support & risk functions.
- Nowadays, trends in technology, regulation and customer experience disrupt the traditional bank as just described.
- Technology will reshape the landscape of banking applications and infrastructure (e.g. cloud computing, blockchain, API's, artificial intelligence, open source software).
- Regulation will accelerate fragmentation of the value chain (e.g. PSD2).
- Customer experience will continue to widen its scope (e.g. gamification, loyalty, context and location aware services, leveraging social networks, guided self-service, more convenient security through biometrics).



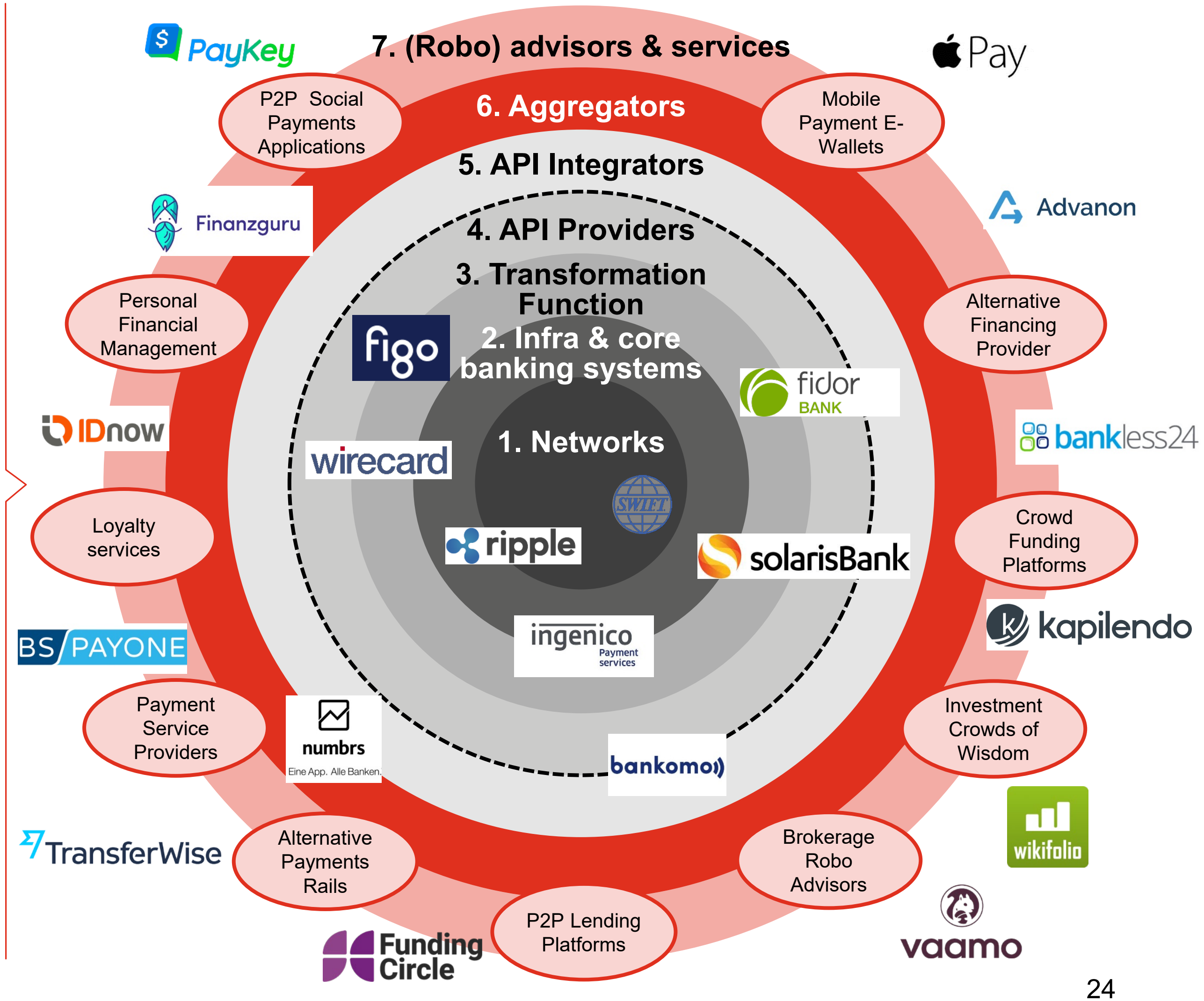
Vertical integration turns into an ecosystem with different layers

1. Networks: Networks facilitate in interbank communication and money transfer.
2. Infra & Core Banking Systems: Infrastructure and application running hereon ensure that banks can offer core banking services such as payment processing and account management.
3. Transformation Function: Everything needed to attract money (savings) and to provide loans. Transformation function contains functions such as banking license, asset holder, card issuer, Asset-Liability Management, KYC, etc.
4. API Providers: This is a new capability for banks in which they act as API provider and consumer to share data.
5. API Integrators: An API integrator is a company that collects and integrates different APIs and sells the resulting datasets or engine.
6. Aggregators: An aggregator combines different (financial) services in one customer portal, often combined with (advisory) services (layer 7).
7. (Robo) Advisors & Services: This layer encompasses the customer interface. In the past this would be the branch networks. Nowadays it contains a variety of customer services such as mobile payments, lending, robo-advice etc.



Each layer comprises its own sub-industries…

1. Networks: The networks subindustry formed by traditional parties such as SWIFT could be disrupted by Blockchain solutions.
2. Infra & Core Banking Systems: Traditional (legacy IT) assets of a bank such as core banking systems can be sourced externally from companies like Figo.
3. Transformation Function: Companies like Fidor Bank offer core banking services as well as services that accommodate transformation functions.
4. API Providers: Under PSD2, banks need to provide an API platform so TPPs can access user information if consented. Other API providers in the ecosystem could be any party with financial data (e.g. for providing market data).
5. API Integrators: Already many API integrators emerged which connect bank accounts to an app to structure data or to build financial profiles (e.g. Candis).
6. Aggregators: Examples of aggregators are Numbrs and Bankomo, allowing users to see their financial information from different accounts.
7. (Robo) Advisors & Services: A lot of innovation has happened in this layer and wide variety of examples can be categorized here, each excelling in specific financial services point solutions.



… and has its own key capabilities and earnings model

- Banks used to be vertically integrated, mainly addressing layers 2, 3 and 7. The largest change between a bank as a vertically integrated silo and banking as an ecosystem is the origination of layers 4, 5 and 6 as well as a lot of innovation by non-banks (FinTechs) in layer 7.
- Within the new ecosystem, each of the layers has its own key capabilities and earnings model. Capabilities vary from utilizing economies of scale in layers 1-2, to excelling in customer experience in layers 6-7.
- An overarching capability that is valid for all layers, is the ability to innovate fast to be able to fulfill changing customer needs.
- The new paradigm of ecosystem banking offers a plethora of earning models, many of which are not based on interest spread thereby offering banks a hedge for interest (spread) earnings.
- Revenue models in this new world generally are usage-based, e.g. subscriptions and pay-per-use. Costs structures change from capex for layers 1-2 to more opex-driven business in layers 3-7.

		Key capabilities	Earnings model
1.	Networks	• Technology (network, security, stability, etc.) • Scale	• Investment for new protocols and standards • Pay per use or license
2.	Infra & core banking systems	• Technology (software, accessibility/ connectivity) • Scale	• Capex investment for IT • Pay per use or license fee (IaaS, PaaS, SaaS)
3.	Transformation function	• (Speed of) product innovation • Excellence in risk and compliance (e.g. ALM, KYC)	• Opex for expertise • Interest- and fee income
4.	API provider	• Data infrastructure, security and privacy • Pricing model	• Opex for IT as a service • Data as a Service, pay per use (e.g. API call) or subscription
5.	API integrator	• (Speed of) innovation of new data solutions • Network of databases	• Buy and sell API's • Pay per use (SaaS) or license fee from TPP's
6.	Aggregator	• Customer experience • New data insights for users • Network of financial sources	• Buy API's • Freemium, advertisements, pay per use, license, referrals
7.	(robo) advisors & services	• Customer experience • Added value of service • Pricing model	• Customer acquisition cost • Various models, most common is fee income

Developing an ecosystem business model requires a new strategic approach

Traditional Business Strategy

- What business are we in?
- Who are our customers?
- Through what channels can we reach our customers?
- What partners can help us reach through those channels?
- How can integration increase value chain efficiency?

APIs are primarily a way to foster execution of a bank's go-to-market strategy.

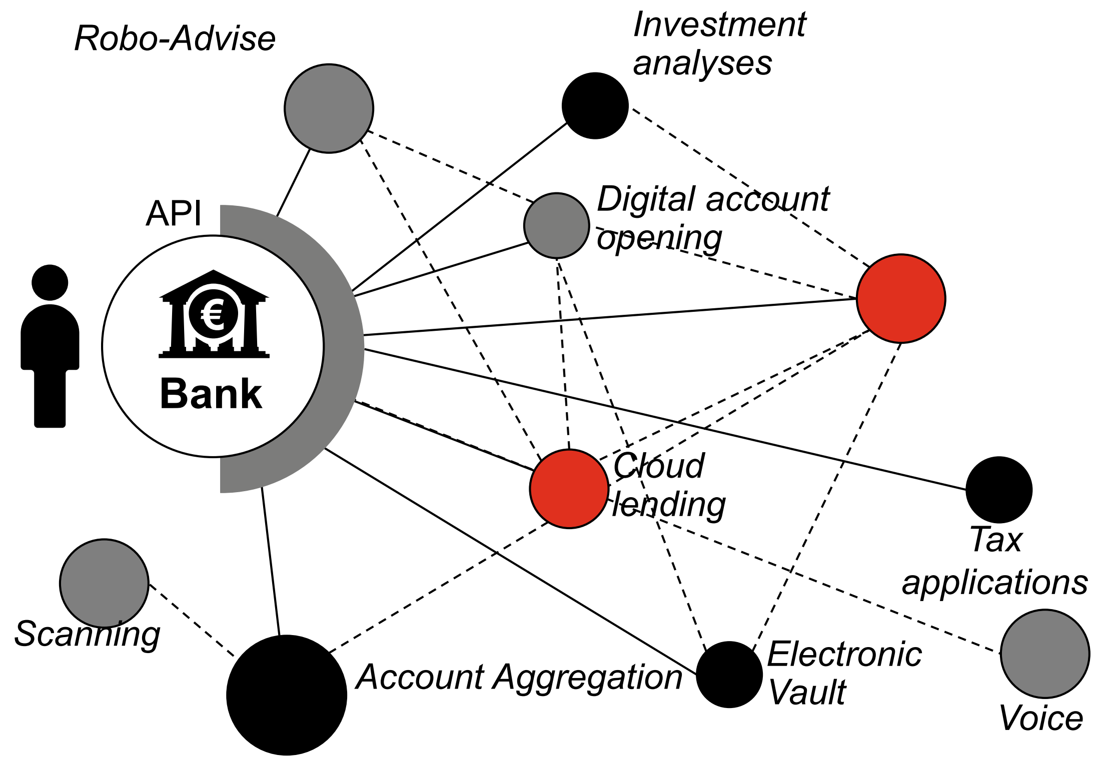
Ecosystem Business Strategy

- What capabilities are we uniquely good at (assets)?
- What ecosystems can benefit from our assets / capabilities?
- What relationships will allow us to enter these ecosystems?
- Which capabilities do we connect to which relationships?
- How do we continuously optimize connections to win, serve, retain customers?

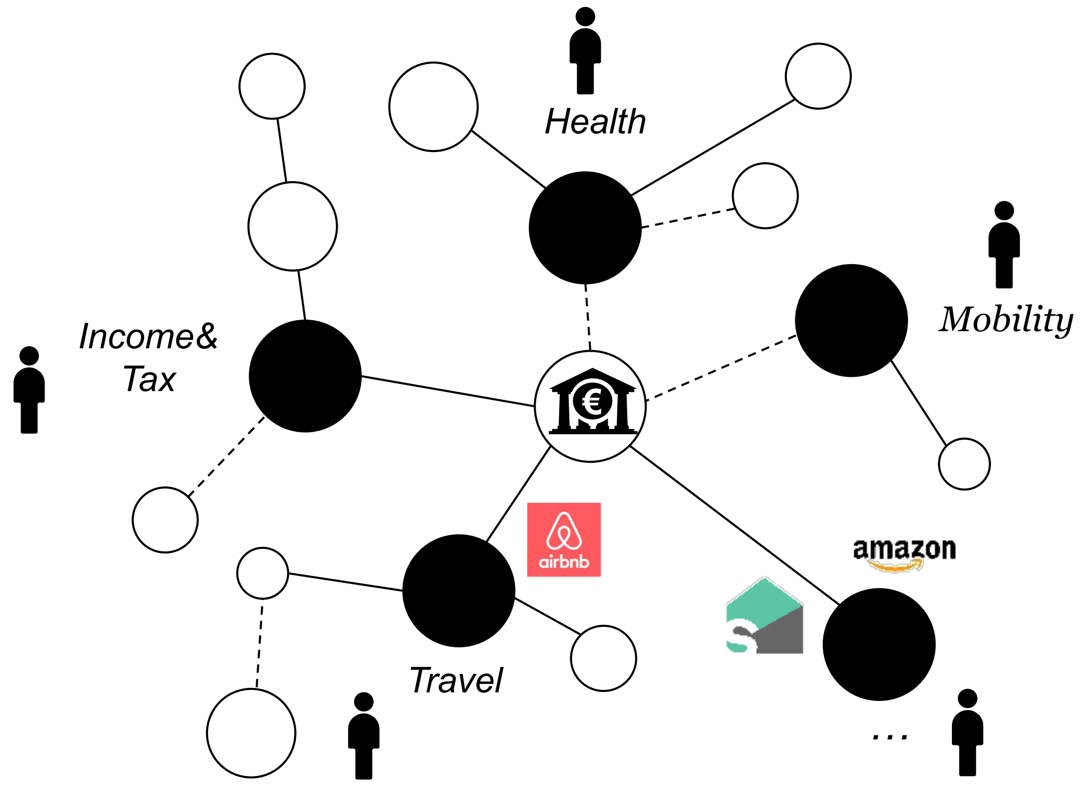
APIs are enabling the bank's core assets and capabilities to create new business within an ecosystem of partners, communities, customers, etc.

A bank can try to scale its own ecosystem with third party services and/or expand into partner ecosystems selling unique capabilities as a service

Banks‘ Ecosystem: bank is primary customer interface, adding third party services to a basic bank with an API layer



Partners‘ Ecosystem: bank as node in partner ecosystem, selling unique capabilities as a service



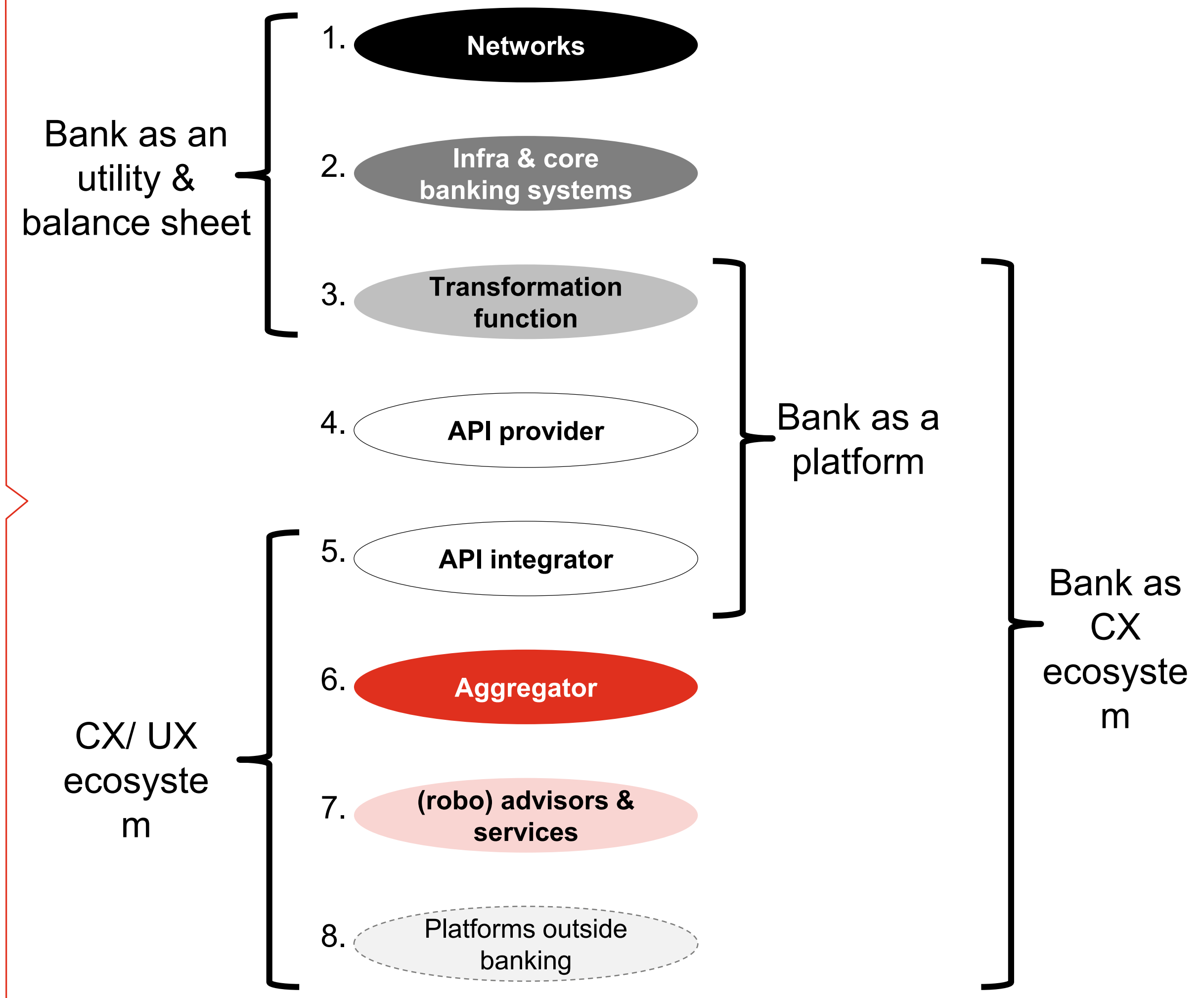
End-to-end banking products

Enabling components

Plug-in value added services

Banks have various future models they could pursue depending on who they want to be

- Bank as an utility & balance sheet: in this model the bank sells 'traditional' banking services, IT and connectivity. These providers have a banking license, provide their (commoditized) services at low costs and manage to make a profit through operational excellence and economies of scale.
- Bank as a platform: These banks make use of the core banking systems of others but have their own banking license. These banks have a differentiating transformation function that they disclose to others through APIs. Operational excellence and expertise are key success factors.
- Bank as a customer experience (CX) / user experience (UX) ecosystem: These banks focus on owning the primary customer relationship through excellent customer experience and engagement. They do not have a banking license and connect to services of partners including 'traditional' banking services and infrastructure.
- Bank as a customer experience (CX) ecosystem: Like CX / UX banks, CX ecosystem banks focus on owning the primary customer relationship. CX banks also offer partner services but use their own 'traditional' banking suite, and thus need a banking license.

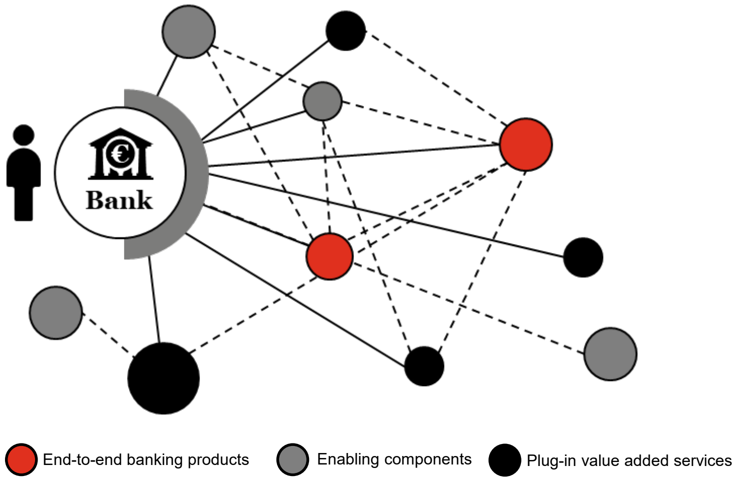


2
Guidelines

How to make banking ecosystems work

Ecosystems provide (inevitable) opportunities for banks if key challenges are managed successfully

Ecosystems…



- Proposition portfolio centred around customer need
- Network of (>= 2) companies/ institutions that interact to create a combined client proposition, thereby generating value for each partner
- Enabled by a technology platform which connects all elements (primary products/ services, enabling services, data)

… bring opportunity…

Establishing / expanding ecosystems is an opportunity for banks to

- Strengthen their value proposition, thereby increasing loyalty of existing customers and attracting new customers
- Access new customer platforms and address new segments
- Benefit from (Fintech) innovation
- Gain new data insights that offer insights for product development or risk reduction

… but also involve challenges

1. Strategy: "join versus build"-challenge
2. Value proposition: scalability and customer experience / engagement
3. Partnering: agile and flexible partnership deals with the right partner
4. Operating model: support within own organization, required resources and capabilities to be a good partner (technical and organizational), partnership management
5. Change management: overall significant change management challenge
6. Launch: launch and rapidly scale your platform supporting your ecosystem proposition

Key topics and questions to consider in order to make banking ecosystems work for you

Ecosystem challenges	Typical questions to consider
1. Strategy	• Will you provide banking services on ecosystems of others (join), or build your own banking ecosystem (build). • Do you have assets to orchestrate an ecosystem (e.g. brand, platform, financial resources, capabilities, scale)?
2. Value proposition	• What is your "win-win loop" for all participants? And is this scalable? • How will you divide the value you create among stakeholders? (e.g. pricing, benefit sharing, tax deductions, …) • How do you create frictionless entry in a world with KYC requirements? How will curation work (prevent abuse)? • Does your value proposition allow for side switching (i.e. consumers becoming producers and vice versa)?
3. Partnering	• Who should you partner with? Do you have capabilities, processes and frameworks to find partners? • Do you have capabilities, processes and frameworks to organize and manage partners? • How will you simultaneously optimize the capabilities and complexity of your partner portfolio?
4. Operating model	• Are you suited to act fast on global platform partnerships? • How is your platform or ecosystem Target Operating Model different from your traditional operating model? • How will you transition your operating model to an ecosystem model, or enable success in both worlds?
5. Change management	• How will you solve internal conflicting interests (e.g. partnership that results in global but not per se local gains)? • How will you create a culture around ecosystem-thinking?
6. Launch	• Should you first focus on partners/producers or customers/consumers in your ecosystem/platform? • What are the incentives for partners to join the ecosystem when there are no/multiple customers? • What are the incentives for customers to join the ecosystem when there are no/multiple producers? • Where should you launch the ecosystem? (e.g. geography, customer segments) • How should you launch the ecosystem? (e.g. event, using other networks, soft-launch with existing customers)

Appendix A

Methodology & Definitions

In this study, three types of banks were observed: Large and Small Incumbent Banks as well as Challenger Banks

Categorization	Description	Examples
Large Incumbent Banks	The term “large incumbent banks” refers to financial institutions offering banking services prior to 2000, characterized by having an extensive physical branch network and a prominent presence in their relevant target markets. In this study, the three largest German banks by balance sheet total (excluding development banks and central institutions of cooperative banks) were examined. These are the following: Deutsche Bank, Commerzbank and Unicredit Bank (HypoVereinsbank).	Deutsche Bank HypoVereinsbank UniCredit Group COMMERZBANK
Small Incumbent Banks	The term “small incumbent banks” refers to financial institutions offering banking services prior to 2000, characterized by having a physical branch network and a prominent presence in their relevant target markets. In this study, the cooperative banks and savings banks as well as their central institutions (even though their balance sheet totals might qualify as large incumbent banks) were examined.	Volksbanken Raiffeisenbanken Deka DZ BANK Die Initiativbank Sparda-Bank
Challenger Banks	The term “challenger banks” refers to new, completely digital banks set up after 2000, usually offering only selected banking services. In this study, the probably most prominent German Challenger Banks were examined: Fidor Bank, solarisBank, and N26.	fidor BANK N26 solarisBank

Banks entered into partnerships with companies from various service sectors or to implement specific services (1/2)

Service Sectors	Description	Examples
Lending and Factoring	• Directly act as lender • Broker loans for customers • Dunning solutions • Crowd funding platforms • Solutions for managing receivables / factoring solutions	FUNDSTERS, COMPEON, zencap, Funding Circle
Payment	• Financial transaction solutions (often integrated into existing banking solutions) • Often innovative technologies or processes are used for payment solutions • Payment terminals	gini, sumup®
Financial Investments	• Offer investment opportunities in stocks, shares, fixed-interest financial products • Digital solutions for portfolio management • Marketplace for trading • Tools to provide guidance in investment decision making (e.g. robo-advisor)	LIQID, we.trade, DEPOSIT SOLUTIONS, VISUALVEST Dein Geld verdient mehr.
Personal Finance	• Providing support in managing, structuring and planning finances of private / corporate customers	FastBill, lexoffice, candis
Insurance	• Brokerage or offering of insurance products • Management of insurance contracts • Special offers / conditions	SCHUTZKLICK, CLARK, friendsurance

Partnerships could be classified into more than one service sector

Banks entered into partnerships with companies from various service sectors or to implement specific services (2/2)

Service Sectors	Description	Examples
Accounts	• Online banking solutions • Innovative applications and features added to existing online banking solutions	fino, PENTA, Kontist
Blockchain and Crypto Currencies	• Crypto currencies • Financial transaction solutions based on blockchain • Information sharing systems based on blockchain	bitcoin.de Bitcoin-Marketplace - Made in Germany!, CRYPTODAY
Comparison Portals	• Platforms comparing offerings (mostly loan- / financing-related) of banks • Innovative portals that find the best financing strategies for specific customer groups	Fintura Zukunft finanzieren, COMPEON, smava
Online Identification	• Identification solutions that replace traditional identification processes, such as the “Postident” process	IDnow, webID solutions Sichere Online-Identifikation

Other	• Comprises of all other services that have not been mentioned so far, e.g.:
	  • CRM and sales systems
	  • Consulting providers offering all kind of SaaS solutions
	  • Document-security systems
	  • Internal knowledge management systems
		MAMBU, FLEXPERTO, text|engine

Partnerships could be classified into more than one service sector

Banks enter into partnerships out of several strategic objectives

Strategic Goals	Description
Improve Product Offering	Improvements in processes and/or capabilities of existing banking products and/or expansion of the product portfolio.
Access Partner Technology	Gain access to third-party technologies outside of the bank's own development capabilities.
Access Partner Network	Gain access to a partner's existing customer base, its partners and and/or its expertise.
Increase Efficiency	Decrease costs, time, and/or effort of the bank or somehow streamline its processes.
Enter New Markets	Expand specific services to a new geographical market and/or to an international level.

Partnerships could be classified into more than one strategic goal

There were seven common forms of partnerships prevalent in the last several years

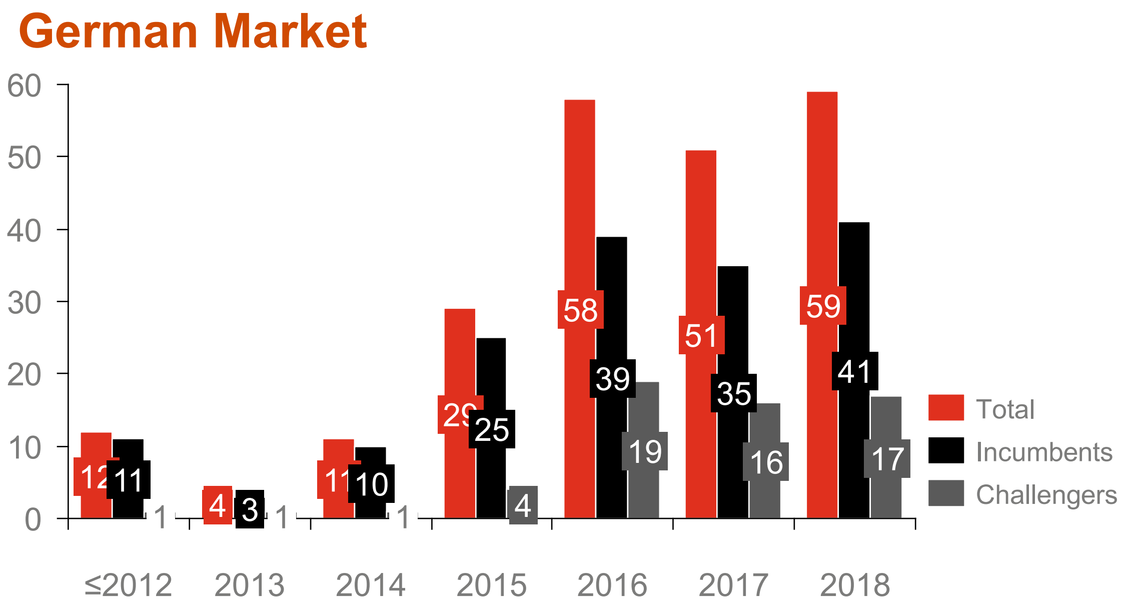
Forms	Description
White-Labeling	Proven technology licensed out to financial institutions as a fully supported solution developed by a third-party provider, allowing seamless rebranding and rapid speed-to-market.
Process Outsourcing	Contracting a third-party to take over activities or processes related to bank's business operations; little involvement in the activities by financial institution once outsourced to third party provider.
API Integration	Partnerships allowing consumer-initiated actions using third-party services (on a non-bank platform under the name of the TPP) which require access to a customer's data located in a bank's infrastructure or the bank's infra-structure itself.
Development	Partnerships with startups in either a business accelerator or incubator environment; banks guide promising startups with unproven concepts to navigate the regulated banking system in exchange for exclusive access to the startups' technology and management team.
Collaboration	Partnerships where banks and third-party providers combine efforts and resources to improve or develop new products or services – e.g. product co-creation.
Referral	Instead of distributing external parties' products, partners refer customers through to one another depending on the type of services requested.

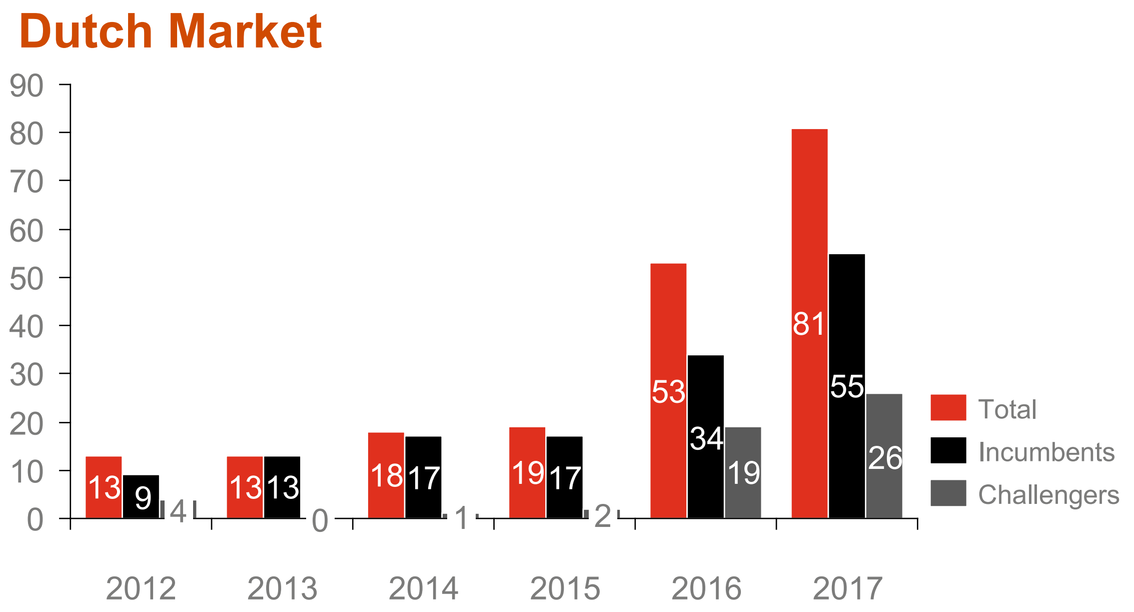
Only strategic partnerships considered; partnerships with a focus on financial returns as the main objective were not considered

Appendix B

Comparison Germany vs. the Netherlands

The development of the number of new partnerships differs significantly in Germany and the Netherlands

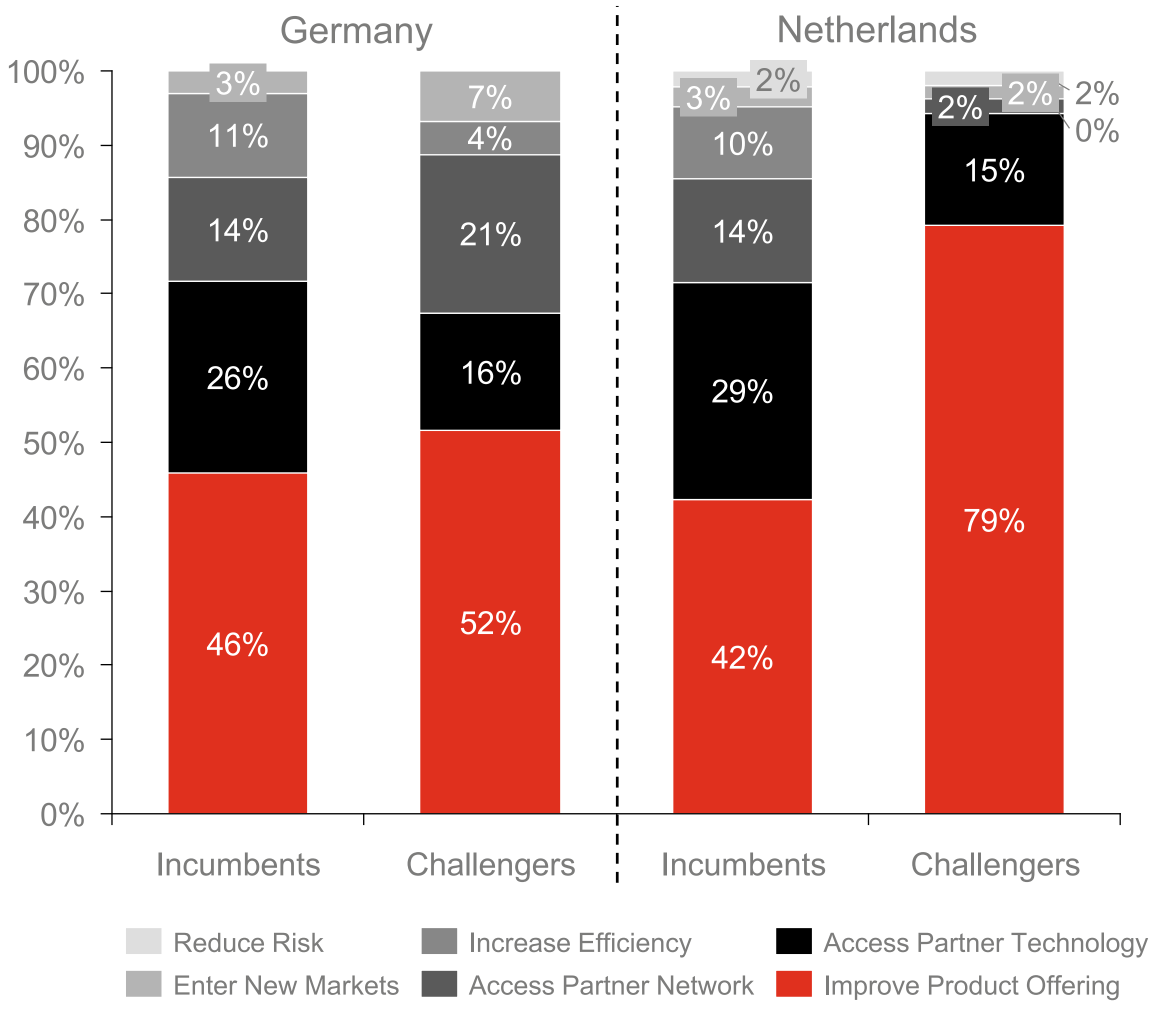




- In the German market, as well as in the Dutch market, the same sample size was chosen (5 incumbent banks, 3 challenger banks) which is why the total number of partnerships is comparable.
- Even though the Dutch market is significantly smaller that the German market, the Dutch banks entered into more partnerships than the German banks.
  - The ending of HVB's Fintech engagement only partly explains this difference, as HVB stopped its program only in Summer 2018.
  - The fact that the Dutch enter into more new partnerships per year may be due to a generally more open approach to digitization and innovation in the Netherlands.
- In the Netherlands, the number of partnerships concluded by challenger banks in 2017 rose only slightly compared to 2016. It can be assumed that, similar to Germany, the number of new partnerships in the Netherlands will eventually flatten out and decrease.

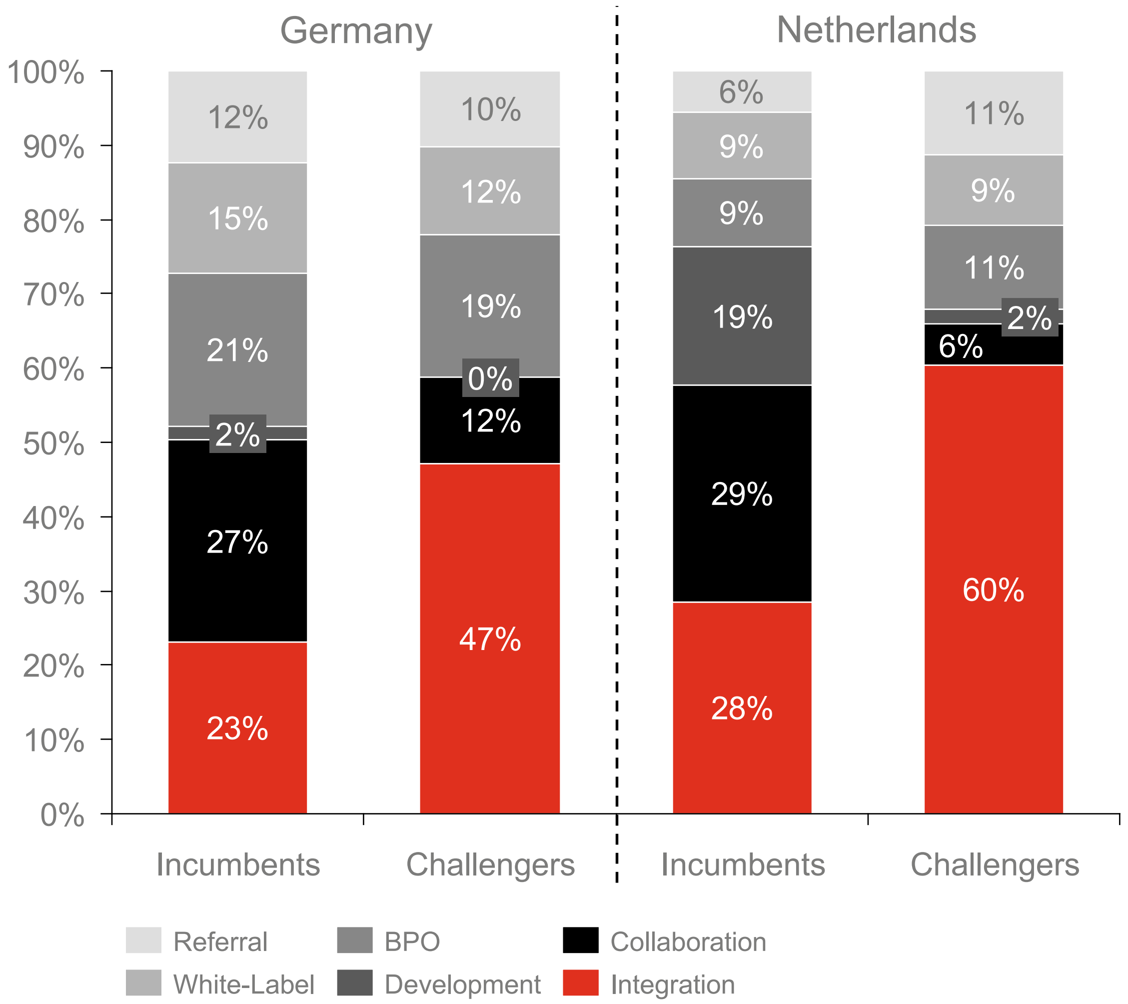
The distribution of strategic goals of Incumbents in Germany is similar to that in the Netherlands, whereas that of challengers is different

- The distribution of strategic goals of incumbent banks in Germany is similar to that in the Netherlands.
- In Germany, many challenger banks are pursuing the strategic goal of profiting from the partners' customer base through the partnership. Therefore, the goal "access partner network" accounts for about 20% of the overall goals. Dutch challenger banks focus more on the technological qualities, the partners offer. Apart from this difference, the distribution of strategic goals in Germany and the Netherlands is also quite similar.



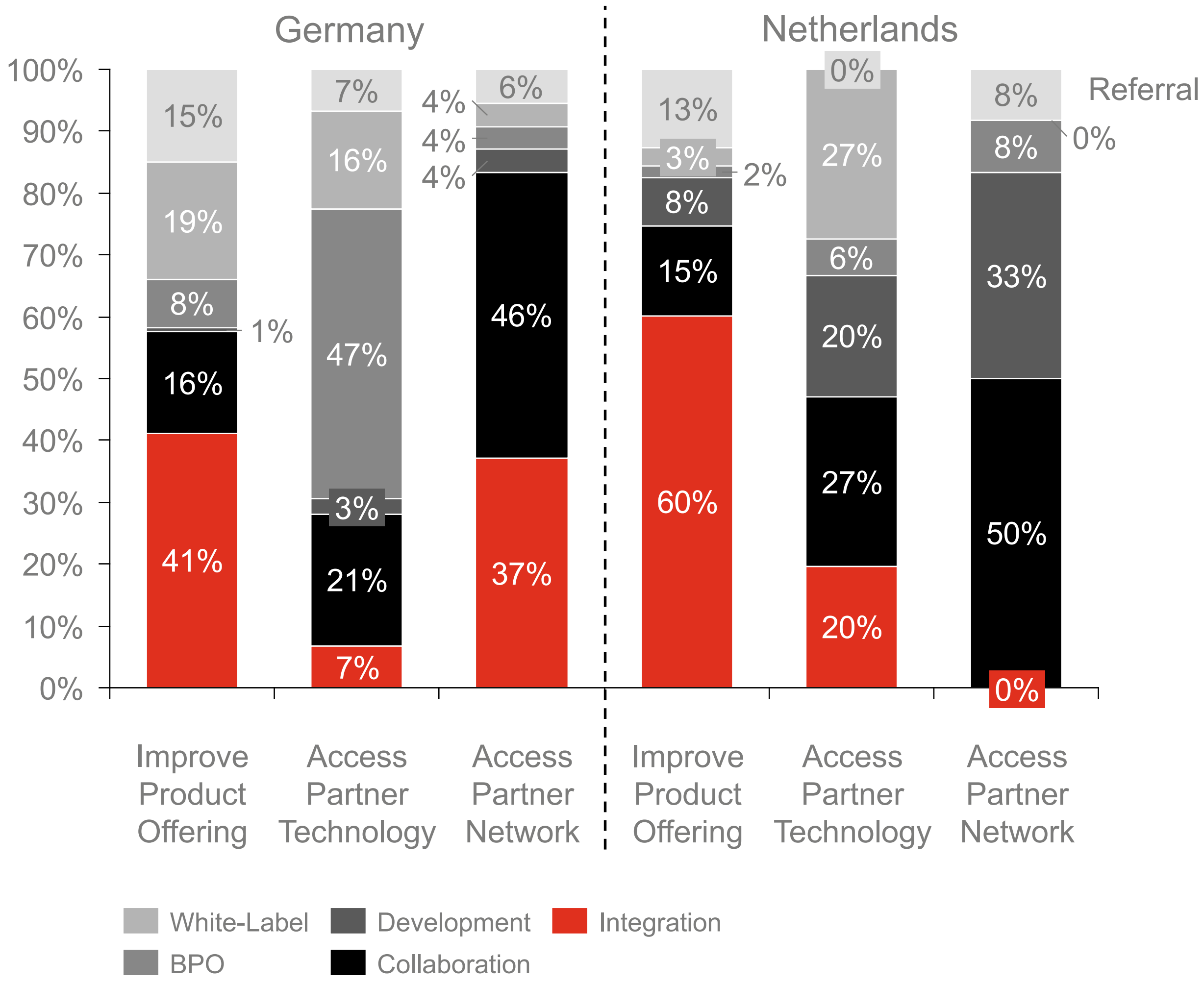
Many trends in Germany and the Netherlands are similar but in the overall distribution of partnerships, differences can be seen

- In both countries, API Integrations are playing a major role in the realization of partnerships; the challenger banks in the Netherlands, however, are using this form of partnership more often than the German challengers.
- In the Netherlands, about 19% of the incumbent banks' partnerships were focused on supporting the partner in developing its business models – in Germany, no such trend could to be recognized. The access to the partners' technologies and management teams are not exclusive and the banks do not provide the same assistance as incubators or accelerators.
- White-Labeling and Outsourcing are a form of partnerships that, generally, is used more often in Germany than in the Netherlands.
  - Especially identification processes in Germany are often outsourced. In the Netherlands, digital identification is not such a new phenomenon and banks therefore developed such processes themselves or do not report about them.



The partnership structure distribution for individual goals in Germany exhibit similarities as well as differences compared to the Netherlands

- Partnerships for improving product offering:
  - In both countries, Integrations are the most commonly used kind of partnership for improving the product offering. In the Netherlands, however, Integrations for this strategic goal are even more prominent. Furthermore, in the Dutch market, banks regularly also help developing young companies to help them create and offer their product / services, whereas in Germany, the banks use White-label and Outsourcing solutions with established companies more often.
- Partnerships for accessing the partner technology:
  - In Germany, the banks mainly outsource their processes when wanting to use their partners' technology or, to a lesser extend, enter into some sort of collaboration or use a white-label solution. In the Netherlands, banks barely outsource the processes but use White-label solutions, help developing their partners, enter into collaborations or use integrations in almost equal shares.
- Partnerships for accessing the partner network:
  - In Germany, many of the partnerships have been entered into, in order to benefit from the customer base of the partners. Therefore, the banks' infrastructure was often integrated into that of the partners and thus gave the former the ability to offer their services also to their partners' customers. In the Netherlands, the banks almost exclusively form colla-borations or help developing companies, probably because they want to have access to the experts' knowledge within the partners' companies.



In both countries, the goals "Improve Product Offering", "Access Partner Technology", and "Access Partner Network" are making up for more than 85% of the overall goals. Therefore, the comparison on this slide is limited to these three goals.