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Open Banking brings about immense opportunities for banks and fintech companies. The catalyst for the change is the European Union's Payment Service Directive, known as PSD2, which means that banks are by law expected to open their application programming interfaces to third-party providers. However, this is only the case with account and payment information; and payment services aren't a particularly profitable business for banks, as PSD2 also regulates their prices. Data regarding other services, such as mortgages, insurances and funds, can remain a secret. These also tend to be the services banks collect the largest portion of their revenue from.

Established banks are well positioned to be at the forefront of new financial technology innovations. With Tieto Financial Aggregation Hub, your company can benefit from a large network of partners and build channels and platforms as well as new business models. Tieto ensures that all Hub members stay up to date with and on top of changing regulations and new technologies. Based on our extensive experience, expertise and ecosystems within the financial industry, Tieto is in a good position to help and advise you to tackle all issues related to Open Banking ecosystems.



Key acronyms

AISP: Account Information Service Provider

API: Application Programming Interface

AS-PSP: Account Service PSP (traditionally a bank)

CAPS: Convenient Access to PSD2 Services initiative

PISP: Payment Initiation Service Provider

PSD2: Payment Service Directive

PSP: Payment Service Provider

TPP: Third Party Provider

XS2A: Access to Account

What is Open Banking?

Banking is experiencing dramatic changes due to increasing levels of digitalisation. Open Banking refers to banks opening up their application programming interfaces (APIs) to third party providers (TPPs), so that the TPPs and financial technology (fintech) providers have access to their data and can, based on that, build new applications and services or create new services together with financial institutions. The catalyst for this market change is PSD2. In practice, PSD2 opens up the EU payment market to companies offering consumer- or business-oriented payments based on access to information about the payment account. The directive applies to account information and payment initiation services. As account serving banks (AS-PSPs) are obliged to give third parties access to account information, new payment service providers as well as existing fintech companies and technology giants are set to seize the moment.

Open Banking is essentially a financial technology term. Although PSD2 is what brought it about, it is by no means all there is to it. At Tieto, we believe that Open Banking poses immense opportunities for the fintech ecosystem that goes beyond the compulsory in order to strengthen customer relationships and transform businesses. Through ecosystem partners, banks can join customer journeys earlier than before and create added value to better serve existing customers as well as attract new ones.

Opportunities - what's your business strategy?

As PSD2 is coming into effect, banks should proceed in stages. At the moment, the most crucial step for each financial institution is to ensure the compatibility and compliance with PSD2. However, just as pressing are the strategic level challenges: how much revenue can a bank lose if it doesn't act? Customers expect seamless digital experiences, and platform-based business models are a quintessential part of the digital economy.

When embracing the opportunities Open Banking brings, banks can leverage the agility, speed, efficiency and innovativeness of startups to improve their own product and service offering. Banks also have access to other banks' data. By creating genuinely multi-banking services, they can attract competitors' customers and spread awareness of their brand.

Openly operating banks can find new sales and marketing channels through their ecosystem partners, increase the sales of their core products as well as establish new commercial models. All this can happen while banks still primarily focus on what they perhaps do best; the innovation happens outside, and banks provide a platform and relationships with customers. This boosts both customer value and revenue and improves customer experiences.

Some examples:

A consumer electronics store integrates a bank's consumer credit offering into its purchase process both online and in-store.

A property developer integrates a bank's mortgage application process into its online service, enabling the bank to give an estimate of loan conditions already at the point when a customer is contemplating options or comparing properties. (See Home Buyer's Journey on page 9.)

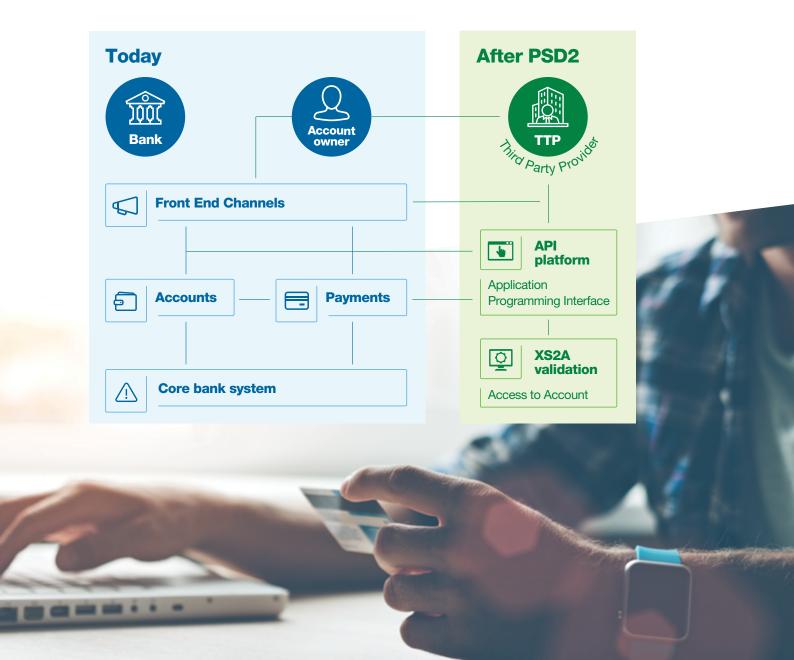
A credit card comparison service uses the bank's account data, and based on that can provide and facilitate more targeted and personalised offers to individuals in an automated way.

PSD2: much more than just a payment regulation

PSD2 opens up the EU payment market to companies offering consumer- or business-oriented payments based on access to account data held by financial institutions. It aims to improve existing EU rules for electronic payments, taking into account innovative and emerging services.

The directive applies to account information services and payment initiation services. As the EU explains it, the first allows a payment service user to better manage their personal finances by having an overview of their financial situation at all times; the latter enables consumers to pay for their online purchases via a simple transfer, simultaneously assuring merchants that the payment has been processed.

At Tieto, we don't see PSD2 merely as a letter of the law; rather, it's a catalyst for disrupting innovations and a building block for a market-changing ecosystem. Through Open Banking and collaboration, not only banks but almost all companies can boost their value by delivering better services and improved customer loyalty.





The driver - what is it?

It all stems from the needs of customers. Essentially, all services that answer a particular consumer need are the ones that win. The EU also aims to transfer more power to the customers, saying that the goal of the directive is "to open up payment markets to new entrants leading to more competition, greater choice and better prices for consumers".

Today's consumers want to use services regardless of time and place, securely and tailored to suit their situation. However, customer segments are increasingly fragmented. This leaves room for plenty of players in different corners of the field. One company can focus on a very niche segment – and just serve it better than anybody else.

PSD2 pushes the digitalisation of financial services, and customer experiences depend on the platforms these services are built on.

What are the options?

In theory, the only imperative for a bank is basic compliance with PSD2. However, this is likely to mean that the bank's data will be increasingly utilized by TPPs and other banks, driving traffic from the bank's own services to ones it has no control over. This, understandably, is not a sustainable solution.

Hence, taking Open Banking beyond PSD2 is crucial to strengthen customer relationships. Banks can:

Be relevant and maintain loyalty by becoming a TPP themselves and offer financial aggregation services for the customers Seek new revenue streams by developing more advanced APIs Find new customers by establishing a whole Open Banking ecosystem around their data, services and established customer base

Fintech companies can help banks address underserved segments, and big tech companies can create new services to their existing customers.

Tieto's overall approach to Open Banking

Banks can take advantage of Tieto's expertise from different perspectives:



Advice and technology

Defining what's bound to be done; assessing PSD2, developing strategies accordingly, creating the architecture and infrastructure needed, implementing and integrating the services.



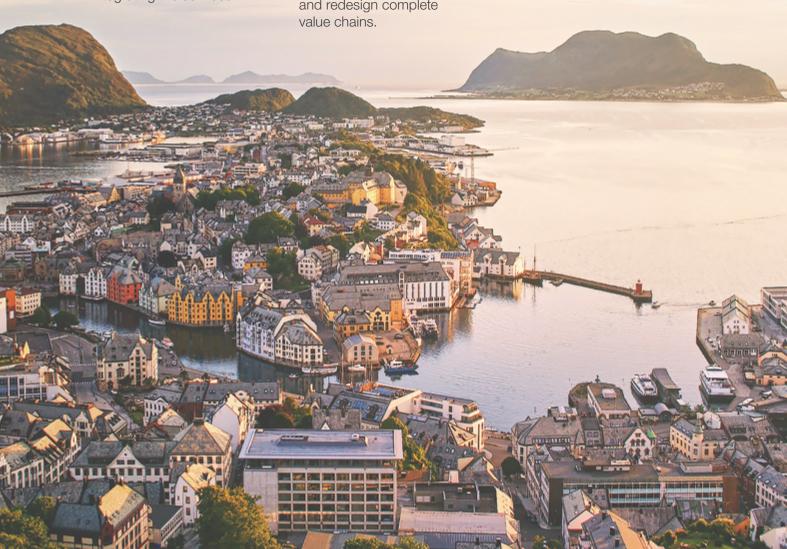
Co-innovation

Driving new innovations in collaboration with customers, partners, developers and the Open Banking ecosystem in general. Tieto has an extensive network of industry customers, and together different industries can find new innovations and redesign complete



Products and services

Developing open and PSD2 compliant products for retail and corporate payments as well as managing APIs.



Tieto Financial Aggregation Hub

Open Banking services aren't new to Tieto. We already provide similar services, such as e-invoicing, and Open Banking is essentially an extension of the company's current offering. Innovating new solutions and piloting them together with customers are Tieto's bread and butter.

One of our first service propositions helping banks to address the opportunities of PSD2 is what we call Tieto Financial Aggregation Hub.

Tieto Financial Aggregation Hub builds channels, networks and platforms to allow other service providers to focus on their core expertise. It also helps banks to stick to the legally binding schedule of PSD2 compliance and implementation.

Tieto PSD2 Financial Aggregation Hub:



Facilitates the standard PSD2 mandated access to account APIs (XS2A API) for any bank.



Offers standard harmonised API for any bank or third-party provider to access account information or initiate payments to Nordic banks.



Develops capabilities to enrich transaction data with e.g. e-invoice and e-receipt data.



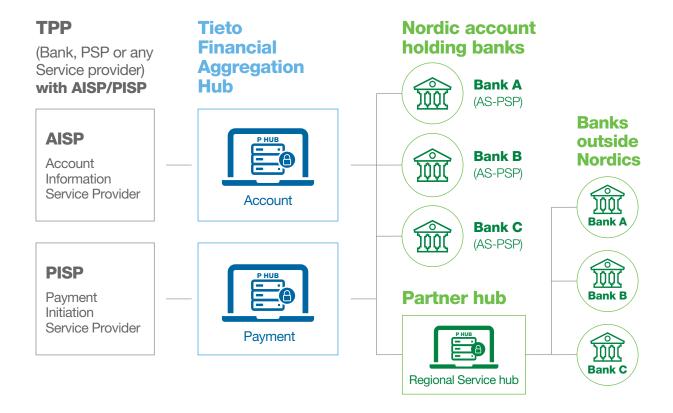
Partners banks and third-party providers with local experts from outside of the Nordics.



Connects to many other sources of corporate and personal financial and wealth data.

The concept

Our Financial Aggregation Hub solution connects to several data sources for financial information and initiating transaction in a multi-banking set-up. Initially the service will provide access to accounts and payment initiation by connecting to the mandated APIs on account serving banks according to PSD2 specifications. This solution concept is illustrated in the picture below. In addition to mandated APIs, the service is continuously developed to connect to new financial data APIs and transaction enrichment services as well as consumer's wealth and asset ownership data sources.



How can it boost your business?

Open Banking can bring about a huge number of ways to add revenue and generate value. Tieto Financial Aggregation Hub offers a growing network of partners both cost- and resource-efficiently. On top of that, it follows the changing regulations, releasing the Hub's members from having to track and code occurring changes themselves and letting them focus on their core activities. The Hub also connects Nordic actors with foreign ones, easing internationalisation.

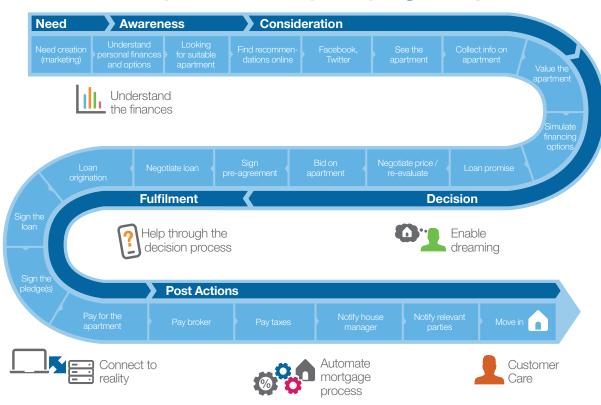
TPPs have a tendency to lean towards big banks with a large customer base and an established position in the market. The Hub can provide smaller institutions the benefit of volume.

Developing new services based on aggregated data - the example of the Home Buyer's Journey

As soon as customers' data has been aggregated from several banks compliant with PSD2 as well as other data sources introduced with Open APIs, we can study customer journeys as well as their needs and aim to do things differently.

For example: in the future, a consumer looking to buy a house can go through available properties online, read about property rates, neighborhood data and public transport networks, compare prices and even views from the windows. In the meantime, the bank can access and analyse the consumer's assets and liabilities, inform them if they can afford the property of their interest, and provide a financial plan – like a personal financial advisor, even when the individual is not (yet) a customer of the bank in question.

A Home Buyer's Journey: Buying an apartment



Tieto, together with a wide network of partners, is implementing services for customer journeys such as home-buying. Aggregated account information can be leveraged in multiple ways throughout the process of a customer purchasing a home.

With financial data of finances and wealth, we attract the interest of the customer and even trigger the process. Financial data can also help a person make the correct decisions regarding their new purchase, rightsizing the mortgage needed based on their personal finances. Finally, the data aggregated from all banks will smoothen the mortgage application process for the customer, as well as help the bank evaluate the customer's finances and risks for deciding the loan margin.

There are plenty of other examples of customer journeys Tieto is developing new services for by utilising aggregated data and Open Banking services.

What are the benefits and value of Tieto Financial Aggregation Hub?



Tieto Financial Aggregation Hub is a market-relevant and cost-efficient platform for creating a multibank service where resources are shared with several Nordic banks.



With Tieto as a co-creation partner, businesses can identify customer journeys relevant to their target segment.



It allows companies to approach Open Banking step-by-step while maintaining focus on their core financial products.



Tieto will link the data market places that are relevant to customers.

Tieto Financial Aggregation Hub

- Y Gives access to data in a simple and faster way to enhance the speed to market of new services
- > Lowers the cost for banks to maintain connectivity to banks in a compliant way when regulations are evolving
- > Frees up resources for banks to innovate and prototype new customer solutions instead of developing technical infrastructure

The leader in the Nordics



Tieto Financial Services is a trusted partner with over 300 customers in the Nordics and globally and we are committed to developing the Nordic and global financial sector through our services and expertise. With more than 2 500 industry experts, a diverse portfolio of solutions within Payments, Credit, Insurance and Wealth Management as well as IT capabilities beyond the financial services industry, we are creating value for business, people and society.

Tieto's presence and connections in the Nordic countries, particularly Finland, Sweden and Norway, are unparalleled. Focusing on the Nordic ensures that Tieto can enrich data beyond the basics. However, Tieto is also well connected in other European countries with partners that are, like Tieto itself, top performers in their local region. This means that Tieto Financial Aggregation Hub members always get the best local service and knowledge. Tieto is a core member in the CAPS market initiative, a large multi-stakeholder coalition-of-the-willing that aims to make PSD2 work safely, in practice and at scale for all.

If you want to know more about how Tieto can help your business, please contact one of our experts:



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Tieto aims to capture the significant opportunities of the data-driven world and turn them into lifelong value for people, business and society. We aim to be customers' first choice for business renewal by combining our software and services capabilities with a strong drive for co-innovation and ecosystems.

Headquartered in Finland, Tieto has over 13 000 experts in close to 20 countries. Tieto's turnover is approximately EUR 1.5 billion and shares listed on NASDAQ in Helsinki and Stockholm.

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