OP Data Balance Sheet 2019

Content

Extent of reporting and restrictions

OP Data Balance Sheet describes the responsible data management, refinement and utilisation for the benefit of customers at OP Financial Group in 2019. This report covers OP's banking and insurance services for private and corporate customers. Some of the examples presented come from other operations of OP Financial Group. OP published its first data balance sheet in 2019.

Key term: OP's financial intelligence

Financial intelligence describes advanced refinement and utilisation of data at OP. Financial intelligence also includes, but is not limited to, the use of artificial intelligence. Financial intelligence refers to internal services or capabilities for creating new added value for the customer, improving OP's operational efficiency and enhancing compliance control on the basis of data, algorithms and automation.

Introduction

OP Data Balance Sheet unfolds the meaning of data for OP and its stakeholders

Financial statements and balance sheet describe a company's operations and performance in terms of finances. This information enables investors and other stakeholders to evaluate the company's operations, often in order to support their decision-making.

Data has become a key element for businesses. Digitalisation and its various manifestations, platform economy, big data and artificial intelligence have given rise to entirely new business models and transformed conventional operating practices. Data has become a raw material of the modern age, a means to increase operating efficiency and a driver of added value – as well as an end product.

At the same time, data has turned into a major form of capital for businesses. More than ever before, it is data that defines the opportunities and risks of a business. Therefore, a similar level of seriousness is required in improving the productivity of data and protecting it as for economic capital.

The concept of data balance sheet has not yet reached established status in the business world. Even though data is growing in importance for business operations, few companies manage it strategically as a factor with diverse impacts on the core of the business.

OP Data Balance Sheet seeks to address this challenge. It depicts how OP Financial Group uses data to implement its strategy and, through this, improves its business, customer experience and risk management. It also presents OP's data balance sheet, i.e. the nature of data assets and data capital, as well as objectives for their development.

For stakeholders, OP Data Balance Sheet provides information on the key principles and practices governing responsible and safe exploitation and processing of data.

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Data has become a raw material of the modern age, a means to increase operating efficiency and a driver of added value – as well as an end product.

Data is at the heart of customer experience

Changes in customer behaviour, the increase in the amount and significance of data and the widespread use of artificial intelligence are strongly reshaping the banking and insurance sector. New players and service models are continuously entering the financial market. This also opens new business opportunities for OP and challenges us to continuously revise our operating and management models.

Our customers require us to provide rapid, individual, high-quality services 24/7 and solutions that are useful for their particular situation. Customers also want to be sure that their data is safe at OP and that it is used for purposes that benefit themselves. We protect our customer data and our own operations through strong data security and data protection practices, and provide transparent information on the use of data. Our exploitation of artificial intelligence is guided by the ethical principles for using financial intelligence that were already implemented at OP Financial Group in 2018.

Digitalisation transforms our work and business models. Employees are required to adopt new knowledge and skills. Areas that are growing particularly quickly include the need to analyse, govern and exploit data and implement artificial intelligence.

At present, artificial intelligence is the technology that is transforming various sectors. More than 500 of our data and business professionals have already received training in the exploitation of financial intelligence. This year, we want to take our skills in artificial intelligence to the next level, by bringing general AI training within the reach of all employees of OP Financial Group. Our goal is to make OP a pioneer in the exploitation of artificial intelligence. By using data, we want to improve the daily lives of both our customers and employees. Thanks to our new, agile operating model, we have further improved our self-managed and customer-driven approach to work.

More than ever before, our knowledge and skills in the exploitation of data affect both the customer experience that we provide and our competitiveness in the financial market. At the same time, transparency requirements related to the exploitation and governance of data are increasing rapidly. The purpose of this Data Balance Sheet is to provide a comprehensive presentation of our efforts and encourage other companies to increase their reporting in this field.

More than

500

of our data and business professionals have already received training in the use of financial intelligence

Timo Ritakallio
President and Group Chief Executive Officer

We make data a competitive edge for OP

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The future winners are those who can use data better than others in terms of productivity, security and responsibility.

When OP as Finland's largest player in the financial sector in terms of customer volumes serves its customers, it uses and produces huge amounts of data. Data is not just raw material or a by-product of service production. It is among OP's most important assets whose management and quality we are seeking to continuously improve and which we try to use as productively as possible.

We use our data capital to create value for our customers, increase the efficiency and security of our operations and produce the best analytical understanding to support our decision-making. In this Data Balance Sheet, we will present our key results for 2019.

Targeting the best customer experience

The key purpose of our data capital and data assets is to provide our customers with benefits and the best customer experience. In 2019, our net promoter score (NPS) for digital services improved and the number of users for OP-mobile reached a new record. We developed new services for managing personal finances, for a fully digital sale or purchase of a home and for assessing home prices. Our chatbots, Opotti and Viljo, provide assistance to an increasing number of customers. Our advanced analytical services for control and data security improve our customers' security.

Financial intelligence as part of daily work – every OP employee gains skills in AI

In the use of financial intelligence, we are shifting from pilot projects to daily use. In 2019, we launched 20 new services or processes that use financial intelligence. In customer services, financial intelligence forms part of the production of smart services or improves customer services. In back-office processes, financial intelligence increases efficiency and productivity in areas such as au-

OP's data capital includes information on

3.9

million private or corporate customers. The quality and security of data governance is the key starting point for using data productively and responsibly.

tomatic preparation, decision-making and control. Financial intelligence augments human intelligence. It's a trusted and tireless assistant that provides precisely measurable benefits. As part of our goal to make OP the leading expert in the financial sector, we will bring AI training within the reach of all employees of OP.

Quality and security of data as bedrock

The quality of data capital plays a key role in the usability and productivity of data and the risks involved in it. In 2019, we introduced a number of new services that efficiently improve the quality of data, such as the new data quality repair process and the My Profile service for customers. Both of these services identify any incorrect data and repair it at source, based on the ready in one go principle. Through centralised data warehousing, we standardise our data warehousing and data governance, increase their efficiency and ensure a high degree of availability of high-quality data in our various services and processes at all times. In addition to opportunities, data also involves significant responsibilities, customer expectations and regulation. We understand our obligations regarding our data capital and the use of it, and act accordingly. The aim of our data protection practices is to protect the personal data of our customers and other stakeholders.

Data is a competitive edge that needs to be used responsibly

Data is becoming an increasingly important form of capital and competitive edge for players in the financial sector. It's not only a question of the amount of data, but in particular of the governance and exploitation of data. The future winners are those who can use data better than others in terms of productivity, security and responsibility.

Sameli Mäenpää
Senior Vice President,
Chief Data Officer

Digital OP from the perspective of owner-customers

Using the services of a bank or insurance company has changed considerably in recent years. To reach its goals – the best customer experience and benefits for owner-customers – OP produces an increasing amount of its services individually through digital channels by using data analytically.

But what are our owner-customers' key priorities regarding the digital OP? We discussed this with our owner-customers **Silla Kakkola** and **Arttu Arstila**.

Mobile is number one

The key criterion for digital services is the ease of use. For example, OP-mobile provides a good digital experience. It's a useful service where you can handle all of your daily banking transactions. People carry their mobile phones with them everywhere and are accustomed to using them in all walks of life.

"I represent the generation that is glued to their phones. Therefore, mobile is the natural channel for attending to all of my banking matters as well. When at home, I rarely open my computer at all," explains Silla Kakkola.

"Sounds familiar. Mobile is number one because you can find all important services in one place. I use OP's online bank much less frequently," continues Arttu Arstila.

Interesting new services, security and ease are the key

Strong data security and good usability are the key features of digital banking and insurance services. Meanwhile, new service launches attract interest. The threshold for trying out a new service is low if it's provided by a trusted company such as OP.

"In digital services, I always make sure first that I'm correctly authenticated so that nobody else

Arttu Arstila

can access my information. If this is OK, I'm more than willing to try out a new service, particularly if it contains a feature that I find interesting," Arttu says.

"Of course, security is important, but ease of use comes right after that. A service with many steps

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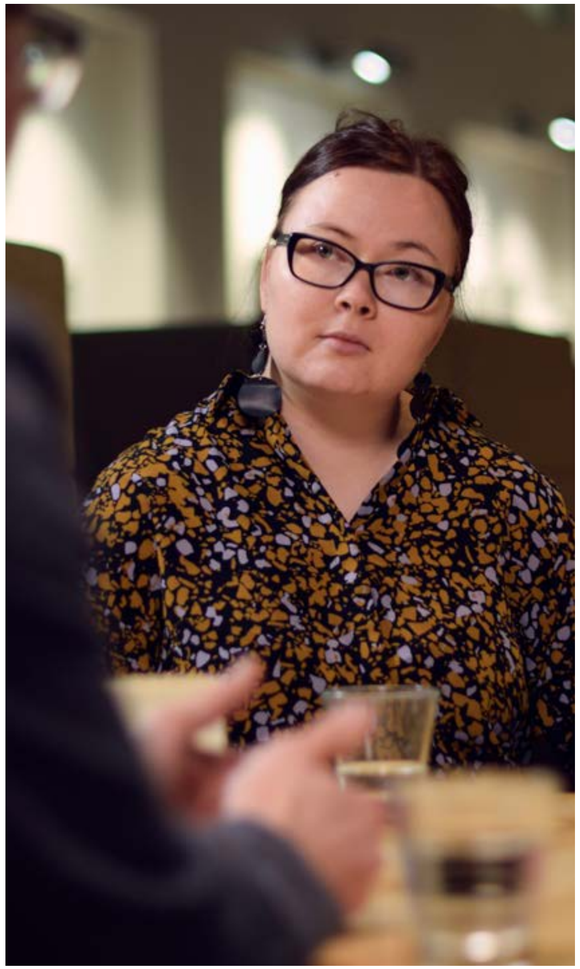
Of course, security is the most important aspect, but ease of use comes right after that. I appreciate digital services with as few steps as possible.



Silla Kakkola

feels slow and badly designed. I appreciate digital services with as few steps as possible. I do like new services and enjoy adopting them, but I weigh their pros and cons more carefully," Silla continues.

Use of customer data: a threat or an opportunity?

Both Silla and Arttu have basically a positive attitude towards OP using its customer data comprehensively to provide them with more individual services. However, this issue has two sides: customers may feel that the bank has too detailed information about them.

"The fact that the bank knows its customers well definitely has many benefits. But there have been concerns worldwide about all the data collected about us and the purposes for which it may be used in the future. In this respect, I have strong confidence in OP as a responsible user of customer data," Silla says.

"On the other hand, I find that it's actually OP's duty to use customer data as comprehensively as possible. Of course, the most important thing is that it uses data in the best interest and for the benefit of the customer. An automatic home loan decision is an excellent example of this," Arttu points out.

Artificial intelligence as a welcome tool

The use of artificial intelligence in the production of banking services is part of natural development and the transformation of work in the financial sector. However, the increasing use of artificial intelligence also triggers discussion about the importance of responsibility and trust.

"At the moment, the pace of change is huge, and I find it important that OP uses discretion before it progresses with digitalisation and the use of artificial intelligence. It's important that all customers are able to keep apace with the development, regardless of age or digital skills, and that a certain service level is guaranteed for everybody," Silla emphasises.

"Basically, I'm confident that algorithms and automation will improve the services offered to customers and also provide significant support to OP's employees in their work. Adapting the old saying, artificial intelligence is a good servant but a bad master," Arttu sums up.

Customer and data

OP uses data to bring benefits to its customers

The best customer experience is not generated by accident. OP's data capital is among the largest in Finland, and OP uses it comprehensively to better understand its customers and provide them with the best banking and insurance services. OP is committed to using its data capital responsibly.

OP uses data to develop and produce high-quality banking and insurance services, improve customer experience and make its daily operations more efficient. It also uses data to manage risks between OP and the customer, as well as improve the security of the entire monetary system. The use of financial intelligence has rapidly become part of everyday life.

Data is a valuable asset for OP. By actively using data, OP is seeking to provide its customers with the best possible benefit and, ultimately, return based on efficiency or added customer value.

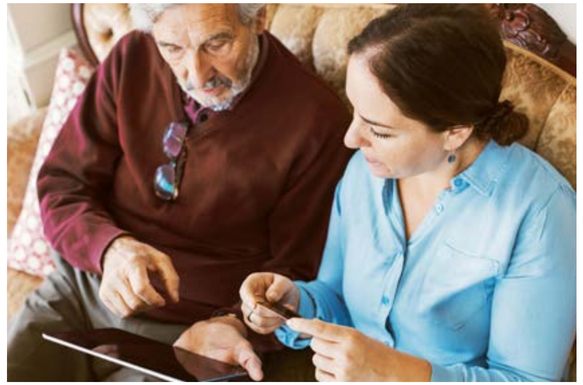
OP uses data comprehensively in various processes: business and customer relationship management, sales and marketing, development, service production, administration, control and risk management.

More than
3.9 million
customers use OP Financial Group's services

Attractive new services, best basic services

Service development and production is a key function in which OP uses its data capital. The aim is to provide private and corporate customers with the leading products and services in the financial sector. OP uses data based customer understanding in all stages of digital service development. It also frequently enriches its own data capital with carefully selected or externally purchased industry and research data.

In recent years, OP has strongly invested in service design, in order to develop new services and improve user experience in the present basic services. By analysing customers and their actions in OP's services, OP ensures that it develops its services in the right direction to make them easy, pleasant and intuitive to use. Accessibility is a very important part of service development.



OP Accessible makes online services available to all customers

OP Accessible is an online service that provides basic banking services in line with the accessibility requirements laid down in the Act on the Provision of Digital Services. It's easy to use without a mouse, and it can be used with screen readers. Its design is clear and light and it adapts to the display of the device used. OP Accessible is available to all OP customers with eServices user identifiers. New services will be gradually added to OP Accessible.

Digital channels NPS

53

Net Promoter Score (NPS) measures a user's likelihood to recommend the service on a scale of 0 to 10. This index is calculated by subtracting the percentage of detractors (scores 0–6) from the percentage of promoters (scores 9–10). The NPS for OP's digital channels is asked from the customer when logging out from the service.

Besides analytics, data-driven service development uses various qualitative and quantitative customer research methods that complement each other, as well as direct customer feedback and testing. In addition, testing and continuous improvement are increasingly carried out through automation and machine learning.

Digitalisation and automation of services

OP's customer service channels are being digitised at a rapid pace, and are actively being developed on the basis of customer feedback. The most popular channels are OP-mobile, the op.fi online service, and the customer service chat. No significant changes have been recorded in the number of users of the telephone service, but physical visits to local branches have steadily decreased.

OP-mobile has rapidly become the most popular channel for handling banking and insurance matters on a smartphone or tablet anytime, anywhere.

To an increasing extent, customer service is provided by one of OP's chatbots. Despite increasingly digitising its channels and automating its services, OP makes sure that customers always have easy access to personal service, too.

Our customers have

1.8 million

eServices Agreements

Improving financial literacy and financial risk management

OP aims to improve its customers' financial literacy and support their capabilities for planning their personal finances and managing related risks. A data based understanding of a customer's overall financial situation enables us to provide them with fact-based support during one-on-one service encounters and on our digital services. This may cover themes such as the income-spending balance, avoidance of over-indebtedness, and preparedness for unexpected events in life.

"OP wants to use its data capital responsibly for the benefit of its customers and society.

Responsible use of data capital and improving financial literacy in Finland are among the key themes of our corporate responsibility programme."

Tuuli Kousa

Chief Communications and Public Affairs Officer

Responsible data-driven marketing

OP uses both individual customer information and general customer data to plan, target and adapt marketing and communications content related to its services. Better customer understanding helps us serve customers more successfully and provide them with banking and insurance services that meet their individual needs.

OP develops its customer understanding analytically. The aim is to know each customer's situation and preferences as individually as possible. Analytical customer understanding is used to support the provision of individual services in various service channels.

Responsibility guides the use of data also in sales and marketing. The permission to use a customer's personal data for targeted marketing is always based on the customer's specific consent. Transparency and clearly communicated principles regarding the use of customer data play a key role since OP is fully dependent on the confidence of its customers.

This confidence is based on responsible and careful operating models and transparency in collecting, storing and using data. Comprehensive information about the collection, processing and use of customer data at OP is available on the op.fi online service, among other places.

"We continuously seek to provide our customers with the best solutions and useful, interesting content. We use our customer understanding to further improve our services and customer communications. This enables us to support our customers in banking and insurance matters in various life situations."

Sari Heinonen
Head of Private Customers, Banking

OP's key digital services and performance in 2019

OP-mobile and OP Business mobile

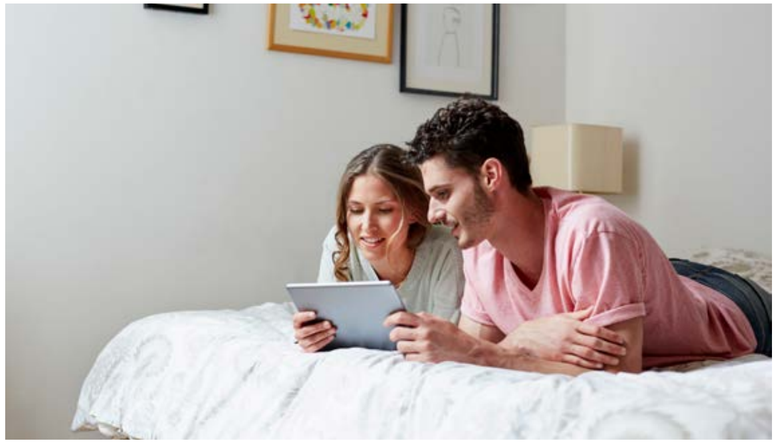
OP-mobile has rapidly become OP's most popular digital service. It is an easy and secure mobile service for daily banking transactions as well as share trading, fund unit subscriptions and monitoring the value of investments. New features launched in OP-mobile in 2019 include the My Finances service, and My profile, which allows customers to maintain their basic details and access OP's data protection services. In addition, OP-mobile includes insurance information and Pohjola Claim Help.

- **In December 2019, OP recorded a total of 26.7 million visits on OP-mobile. In 2019, OP Business mobile recorded up to one million visits per month.**

My profile

The My profile service enables customers to check and update their basic details on op.fi or OP-mobile. The service includes the customer's main details held by OP. In this service, the customer can update their personal data and manage their permissions and wishes related to communications and marketing.

- **In 2019, more than 250,000 customer details were updated on My profile.**



Home price assessment tool

This service supports those buying or changing a home by providing an estimate of its value. The more information the user enters, the more accurate the price range provided by the service. Another important user group are the OP employees defining the collateral values of housing or reporting the value of OP's home equity portfolio to meet EU-level regulatory requirements. The price estimate is calculated on the basis of home price data available from a register maintained by the Union of Real Estate Agencies in Finland by using neural network technology. Collateral value is never determined solely on the basis of financial intelligence, but the actual determination is handled by a human being.

- **About 60,000 price estimates are retrieved from the service per month**

OP's key digital services and performance in 2019

Digital home loan service

OP is the first company in Finland and the Nordic countries to provide a fully digital home loan service since 2018. Issuing a loan offer that is binding on the bank requires that all the information submitted by the customer is correct and that the customer's collateral is in order. In the supporting service, the Credit Engine developed by OP uses financial intelligence to calculate the maximum loan amount and margin offer for the customer. In decision-making, the Credit Engine leverages OP's own data and data obtained from the systems of external partners, such as Suomen Asiakastieto Oy.

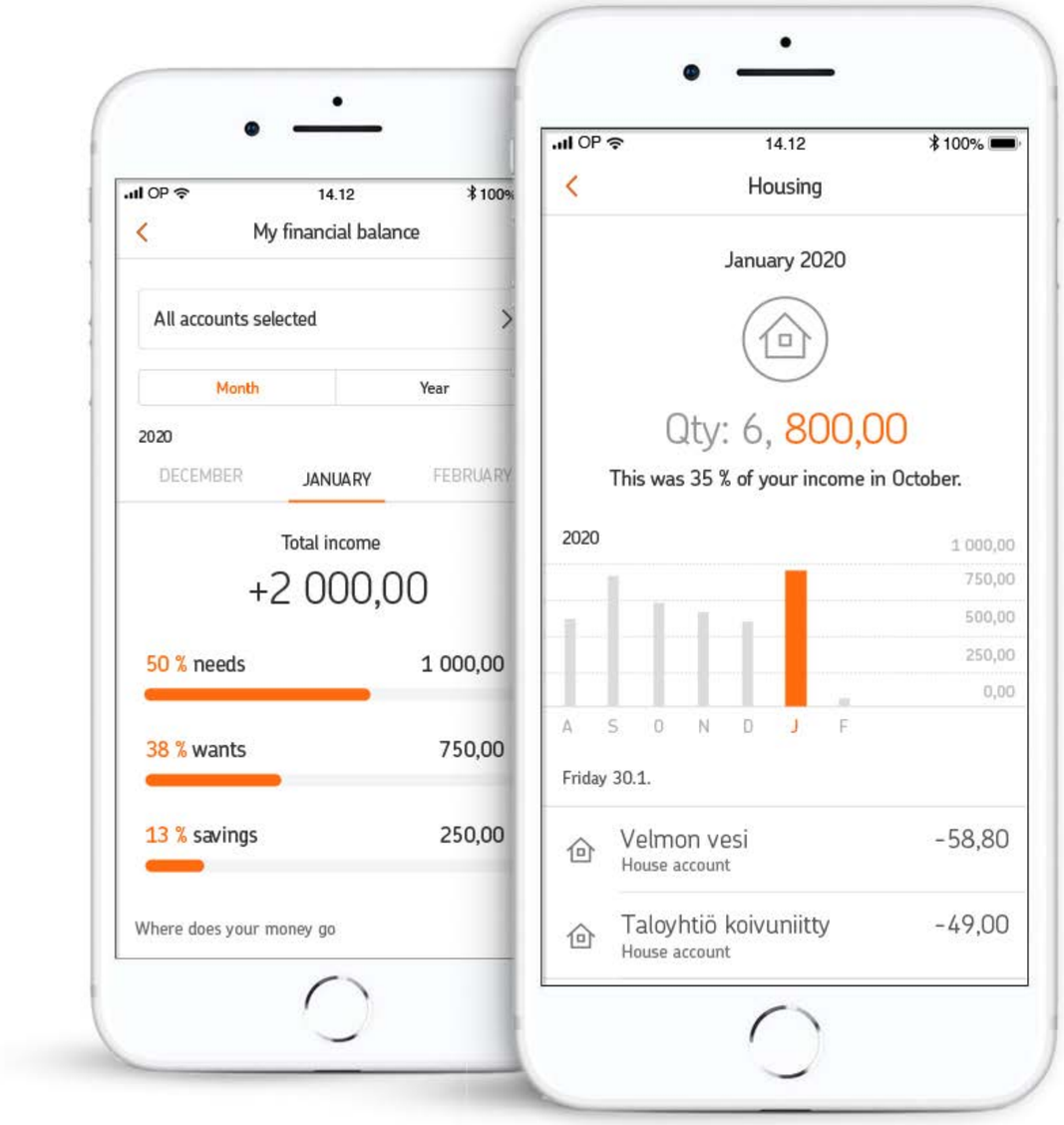
- 9,000 automatically processed loan offers in 2019

Viljo and Opotti chatbots

Viljo and Opotti, the chatbots developed by OP, use natural language processing and chatbot capabilities based on financial intelligence. The aim is to provide banking and insurance customers with answers to the most frequently asked questions quickly and automatically. Opotti, which serves banking customers, and Viljo, which serves insurance customers, reply annually to over 200,000 customer questions online.

If the chatbot cannot answer the question, it will connect the customer to a live customer advisor. The use of chatbots has increased rapidly, and more and more customers get an answer without needing to look for information elsewhere.

- At present, Opotti completes more than 70% and Viljo more than 50% of the sessions entirely, without assistance from a customer advisor.
- A total of 67% of customers are satisfied with the answers provided by Opotti.



Case: My financial balance

My financial balance helps in the management of personal finances

Based on financial intelligence, the My financial balance service gives OP customers an overall view of the balance of their personal finances. It shows at one glance where the money comes from and where it goes. This helps the customer to manage their personal finances and plan them on a longer-term basis.

Launched on OP-mobile in October 2019, My financial balance categorises a private customer's account transactions, income and spending, and groups them to make them more comprehensible. For example, spending is divided into three categories: needs, wants and savings. Under these three main categories, there are 16 sub-categories. When launched, the service included approximately 15,000 categorisation rules and a neural network-based model that continuously improves the set of rules. The service users teach the model by specifying and correcting the model output. This gradually improves the accuracy of categorisations. However, the new categorisation rules generated by the algorithm are not implemented automatically but only after they have been checked by an OP employee.

Improving financial literacy in Finland is one of the cornerstones of OP's corporate responsibility programme. OP promotes the management of personal finances and prosperity in all age groups. OP aims to provide increasingly intelligent services for understanding one's personal finances, as well as to provide coaching in financial literacy.

Case: OP Lab boosts startups internally and externally

Fostering innovation and the platform economy

OP Lab is OP Financial Group's innovation development unit, which is actively exploring and developing new services and business models by exploiting the opportunities provided by new technology. OP Lab's operations involve both internal innovation and partnership-based cooperation models in which startups of different sizes work in close co-operation with top experts from various fields to develop services.

Together with its network, OP Lab develops services for real use cases in the fields of open banking, wealth and asset management, insurance, commerce, new work and health and wellbeing.

OP Lab's operating model is based on experimentation, during which real customer needs and solutions are verified in cooperation with partners and customers. The aim is to develop a new innovative service or product in a matter of a few weeks, after which decisions are made on whether the new product will be scaled up for OP Financial Group's entire customer base or for the general public. During the development journey, OP Lab's experts, visiting top experts from different fields and management representatives challenge and support companies developing the service.

Through co-creation, OP provides a unique platform for startups in Finland. Challenging workshops, mentor meetings and networking help refine companies and products to bring out their best features within a short period of time. A support team is appointed for each participating company to back up its development and commercialisation work. OP's large customer base provides a unique test environment for piloting services.

Kristian Luoma
Head of OP Lab

Feature article
Interview with
Antti Myllymäki
Manager, Financial Intelligence

Financial intelligence increases operational efficiency and improves customer experience

Exponential growth in the amount of data and customers' growing expectations for better service are challenging the governance and exploitation of data in a new way. More and more often, artificial intelligence (AI) can support and enhance human work.

Data analysis and exploitation is increasingly based on AI solutions whose key elements include the customer benefit created, the amount and quality of raw material data and the customer's trust towards AI.

"Banking and insurance, alongside commerce, healthcare and ICT, are among the sectors that have rapidly begun to utilise AI. The large volume of business and customer transactions enables these sectors to realise the benefits of AI more quickly than in other sectors," states Antti Myllymäki, Manager, Financial Intelligence at OP.

Our goal is that more than half of our new services will use financial intelligence.

"The rapid development of AI is boosting up the whole sector. At OP we have, within a short period of time, transferred from individual experiments to producing broad-based benefits by utilising AI, data and algorithms. Our goal is that more than half of our new services will use financial intelligence," Myllymäki continues.

Financial intelligence improves customer experience and frees people from routine tasks

The term "financial intelligence" as launched by OP refers to a service or capability in which data and algorithms are used to create new added value for the customer, improve OP's operational efficiency or enhance compliance. In services designed for customers, financial intelligence is increasingly used for producing analytical services that benefit customers or for improving customer experience or customer services.

In back-office processes, financial intelligence increases efficiency and productivity in areas such as automatic preparation, decision-making and control. Through financial intelligence, routine tasks and inquiries in particular can be transferred from humans to digital assistants and chatbots. Financial intelligence augments human intelligence. It's a trusted and tireless assistant that provides precisely measurable benefits.

OP pioneers its sector

The rapid development of financial technology in Finland and worldwide is increasing the potential of financial intelligence. The financial sector includes both established players such as OP and younger fintech startups. These startups develop entirely new applications for the sector and also participate in producing existing services. Meanwhile, large companies are seeking to become more agile by launching novel AI-based solutions designed for extensively enhancing the daily lives of their employees and customers.

"We find that OP's role is to actively promote the use of AI. Public debate needs concrete examples, active sharing of the benefits provided by AI use cases, and business case examples of AI becoming commonplace. One example of our efforts to promote the use of AI is the AI demo afternoon, a sector-independent event targeted at grass-root developers that OP launched in autumn 2018." Since then, similar events have been organised by other large Finnish companies, too.

"The fact that AI is becoming commonplace supports both startups and more traditional players across company and industry borders. OP aims at promoting AI use cases in all sectors, including the public sector, because this also contributes to the success of Finland and Finnish companies," Myllymäki avers.

Case: OP expands its AI training to cover the entire personnel

The increasing use of AI-based applications across all sectors of business and society also increases competence requirements related to AI. The commonplace nature of AI is reflected at OP, too: until today, more than 500 professionals in development and business have received training in the management and use of AI.

In 2020, AI training will be extended within reach of all OP employees, covering the general principles and common applications of AI, the existing and planned uses of AI at OP Financial Group, and customers' expectations and questions regarding AI. The training will include web-based learning and interactive virtual lectures.

AI to become a basic skill for every OP employee

General knowledge in AI will further improve OP's ability to use AI in various fields, feature a common language about AI, and promote an understanding about it among customers, too. Over the years, OP Financial Group has gained positive experiences with training provided to the whole personnel under themes such as service design, mobility and data protection.

Ethical policy decisions regarding financial intelligence

The various applications of AI affect people's lives to an increasing extent. AI has become commonplace, and almost all new digital services exploit the opportunities provided by AI in some way. In this development, trust plays a key role. Both the developers and users of AI are always responsible for controlling its operation.

OP understands that the increasing use of AI also raises concerns. For this reason, it's important to ensure transparent and controllable AI-based decision-making, as well as predictable functioning, protecting against manipulation and the division of responsibilities regarding AI-based decisions. In 2018, OP was the first company in its sector to make a policy decision concerning the use of artificial intelligence.

OP's ethical guidelines for the use of financial intelligence

People-first approach

We will use data and AI responsibly and for the good of our customers. We will define the objectives guiding our use of AI clearly and refine them if necessary as based on changed data, technical possibilities and the working environment.

Transparency and openness

We will act openly in our relations with customers, partners and stakeholders, ensuring sufficient transparency for the evaluation of the AI we have developed. We will discuss our use of AI openly and subject our work to public scrutiny.

Impact evaluation

We will carefully study the impacts of the choices we make in our work on our customers and the society around us. Our choices regarding AI utilisation are always responsible.

Ownership

We will define owners for the principles guiding our operations and for the algorithms we have developed, and will ensure the ethics of AI throughout the lifecycle.

Privacy protection

We will guarantee privacy and personal data protection for the individuals represented in the data we use in accordance with our data protection principles.

Case

The home price estimate service leverages on financial intelligence

Juha Vesanto

The home price estimate service provided by OP Koti is one of the most interesting AI-assisted services launched in 2019. Based on the details of a home, it calculates an estimate of its probable value. The service is based on OP's financial intelligence, which uses the price statistics of the Central Federation of Finnish Real Estate Agencies (KVKL) as data capital.

"The supporting service is a financial intelligence-based neural network model that has been trained on the basis of KVKL data. The estimate provided by the model is based on the location and other details of the home or property as entered by the user. Based on these, the model provides a price range within which the home's value is very likely to be," says Juha Vesanto, Lead Data Scientist at OP.

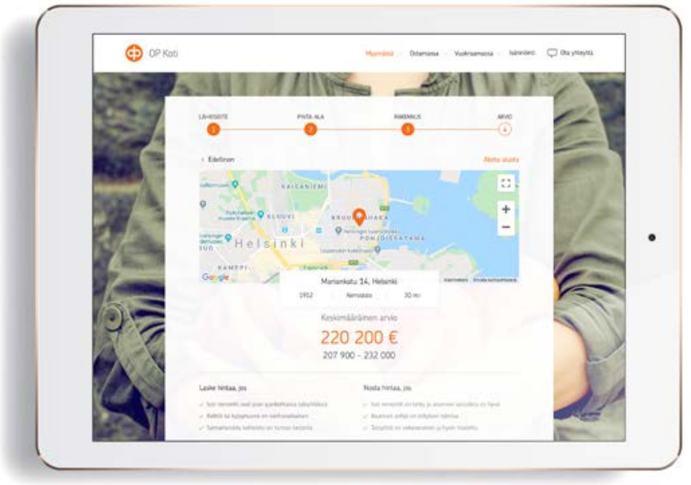
A service with many uses

The home price estimate service is targeted at both OP's internal users and customers. The primary user group are private customers who consider selling or buying a home.

"The service is also used by OP employees for determining the collateral value of a property as part of the home loan process. However, OP employees also use their own expertise and, if needed, that of OP Koti real estate agents to determine the correct collateral value," Juha Vesanto continues.

"We have also considered and investigated adding other data capital to the service. In the future, it may be possible to add predicting elements to the service, such as the impact of pipeline and other renovations on home prices. This would in turn require comprehensive digitalisation of the necessary information, such as house manager certificates. In addition, OP has access to more detailed data on property transactions brokered by OP Koti. Use of such data could further enrich and specify price estimates for the benefit of customers."

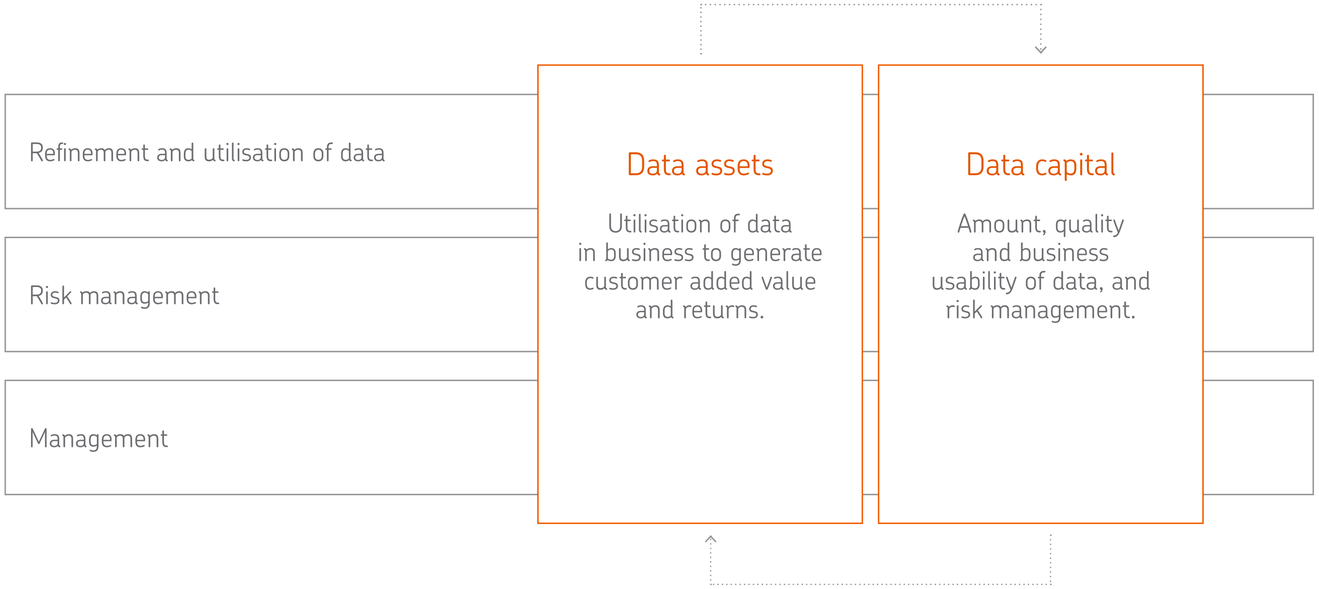
The Ruuvalli support service facilitates lending, the bank's internal processes related to the control and monitoring of the home equity portfolio, and regulatory response. The European Central Bank (ECB) requires banks to apply methods that are as comprehensive and reliable as possible to determine the value of apartments and other properties included in their home equity portfolio. Ruuvalli also enables OP to analyse large bodies of data to identify errors and deviations in the values of individual apartments and in parameters that affect them. This improves the quality of data and the accuracy of collateral value setting.



Data balance sheet

OP's data balance sheet and data value chain

OP Data Balance Sheet describes the responsible governance, utilisation and management of data at OP Financial Group. The key concept is OP's data balance sheet model, which describes the content of and interrelations between OP's data capital and data assets produced by using this capital. The data balance sheet model describes both sides separately. In addition, it elaborates on the management, business and risk management processes between the two sides of the balance sheet.



The data balance sheet describes data as a capital asset used for generating added value, and as valuable capital that involves return potential.

What are the benefits of data balance sheet model thinking?

The OP data balance sheet model was developed to increase understanding on the balanced development of the continuously increasing data capital, in addition to the value of services produced by using this capital. The model combines the management of data that takes place in the data capital side and the management with data that takes place in the data assets side.

- Data capital represents all data held by OP. The amount, quality and usability of data increase the value of data capital in the data balance sheet. Data governance and continuous quality improvement take place in the data capital side. Data forms part of OP's equity and, in individual cases, also part of its liabilities, on which it seeks return, and the value of which it hedges against risks.
- Data assets represent service production for external or internal customers on the basis of OP's data capital. Data assets describe the use of data, such as generating business benefits, efficiency or customer added value and, ultimately, generating financial return on the invested data capital.

The two sides of the data balance sheet are combined in the processes of data utilisation, risk management and balanced management.

Data capital – the basis for value creation

OP's data capital consists of all data in its various forms as held by OP. The value of data capital is based on its business usability, efficient risk management and, ultimately, its productivity in financial business. The more faultless, business-connected data OP has in its data warehouses, and the higher its quality and degree of refinement, the more valuable its data capital.

Data capital management focuses primarily on processes related to the amount, quality and usability of data as well as risk management. The aim is to safeguard that the quality, availability and reliability of OP's data assets, i.e. digital services, is as high as possible from the viewpoint of OP's business and customers.

The capital included in the data balance sheet comprises intangible human knowledge capital, material data capital and data-related operating models. Examples of material data capital include customer data, counterparty data, product data, contract data, external data, financial data and market data. Data capital-related operating models include processes for data protection, data governance, data quality management and data correction.

> Data capital in OP's data warehouses currently amounts to 520 terabytes of data, and it is increasing continuously.

Data assets describe the exploitation of data capital

Data assets comprise OP's value-generating digital services. Data assets describe the development and production of data-intensive services, processes and architectures in order to generate business benefits and customer experienced benefits. Business benefits may include generating entirely new revenue, increasing the sale and profitability of existing products and services or decreasing operational costs by use of data.

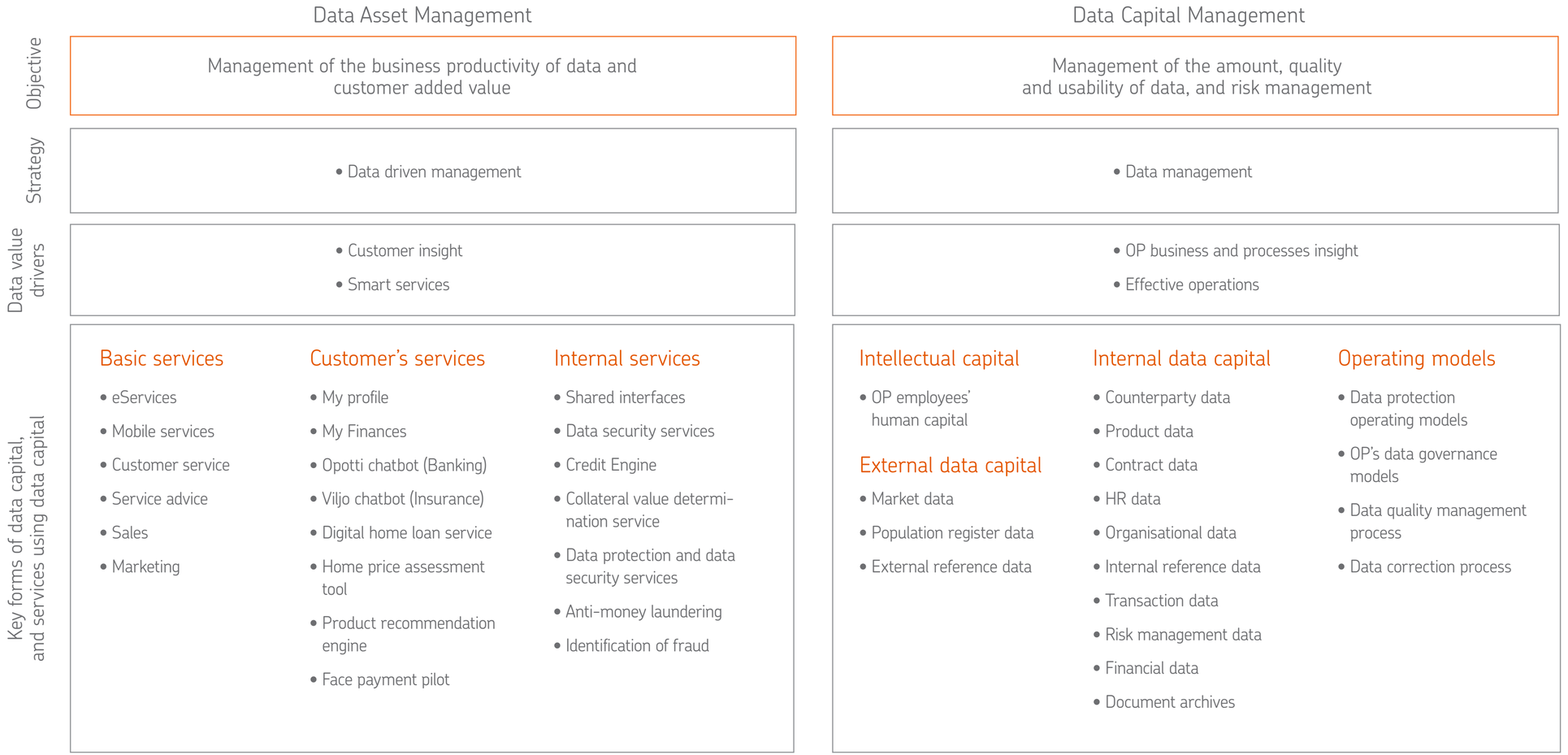
Data asset management is always business- and customer-driven. The data assets side describes the use of data as a tangible or intangible factor of production, as well as the products and services that represent either entirely new business or major modernisation of existing business. In addition to return potential and return target, the use of data assets always involves business risks and risks of new services, which need to be taken into account in data asset management.

Data asset returns are increased by the high quality of data capital as well as capabilities in development, analytics, business and customer understanding, the use of financial intelligence, improved decision-making, new value-added services, service design based on customer understanding, customer experience creation and marketing.

Well-balanced development of the data balance sheet is important

Similarly to a financial balance sheet, the aim of the data balance sheet is to achieve a balanced position. This means that data assets and data capital generate new value in a reciprocal and balanced way. OP manages the balance of its data balance sheet by safeguarding the value of data capital and by ensuring that its digital services – i.e. data assets – are useful and create added value for customers.

A well-balanced data balance sheet is also supported by comprehensive risk management processes through which OP identifies risks involved in its data capital and data assets, and manages them effectively. Key risks involved in the data balance sheet include risks related to data protection and cybersecurity, business risks and technological risks.


Data Asset Management
Data Capital Management
Objective
Management of the business productivity of data and customer added value
Management of the amount, quality and usability of data, and risk management
Strategy
• Data driven management
• Data management
Data value drivers
• Customer insight
• Smart services
• OP business and processes insight
• Effective operations
Key forms of data capital, and services using data capital
Basic services
• eServices
• Mobile services
• Customer service
• Service advice
• Sales
• Marketing
Customer's services
• My profile
• My Finances
• Opotti chatbot (Banking)
• Viljo chatbot (Insurance)
• Digital home loan service
• Home price assessment tool
• Product recommendation engine
• Face payment pilot
Internal services
• Shared interfaces
• Data security services
• Credit Engine
• Collateral value determination service
• Data protection and data security services
• Anti-money laundering
• Identification of fraud
Intellectual capital
• OP employees' human capital
External data capital
• Market data
• Population register data
• External reference data
Internal data capital
• Counterparty data
• Product data
• Contract data
• HR data
• Organisational data
• Internal reference data
• Transaction data
• Risk management data
• Financial data
• Document archives
Operating models
• Data protection operating models
• OP's data governance models
• Data quality management process
• Data correction process

Feature article
Juho Malmberg, CIO
Development & Technologies

Towards a more agile, digital OP

Digitalisation has significantly transformed operating models and technologies in the financial and insurance sector. OP's role is to be an active innovator in our sector, with a well-balanced focus on providing the best customer experience, developing innovative services and processes and ensuring efficiency, safety and security.

The platform economy continues to grow on a global scale. New technology is constantly bringing new digital services and new ways of working to our daily lives. In Finland, too, users are imposing higher requirements on banking and insurance services, due to the availability of popular, rapidly developing services and applications. In developing these services, we take account of the special characteristics of our sector, including regulation and security requirements.

OP's updated ICT policy priorities guide our development and technology work. The aim is to provide customers with innovative, reliable, high-quality solutions by working in an agile way and using advanced analytics and technology.

OP's ICT policy priorities

Standing out through financial intelligence

We use financial intelligence as a tool for providing excellent customer experience and further improving our operational efficiency, fraud prevention and anti-money laundering.

Cloud is our primary technology platform

Cloud services and SaaS are our primary choices for new service development.

Mobile first

As a rule, we develop both new services targeted at customers and our internal tools primarily on the mobile channel.

Increasing OP's technology competencies

ICT has become a core competence for financial sector companies. We strengthen our own technology competencies and partner with leading operators in their respective fields.

APIs first

Services are launched and used through productised API interfaces. This enables a layered architecture and capabilities for operating in the platform economy.

Agile way of working

Reduces hierarchy, gives responsibility and powers to self-managed teams, is based on servant leadership, and intensifies cooperation with business.

Integrated cybersecurity and quality

The security and quality of services are an important part of customer experience. Quality includes accessibility, operational quality and ease of use.

Active cost management

The aim is to reduce development costs in relation to revenues and costs per unit in production.

Data governance

Data capital quality and usability at the core

Data governance in OP is developed within the following three main themes:
a) data quality,
b) availability and usability of data, and
c) confidentiality and privacy of data.

OP has actively developed its data management. The aim is to promote the combination of high-quality data governance and business opportunities provided by data for the benefit of customers. The highlights of 2019 include the implementation of a new data governance model.

All of OP's services and operations are based on high-quality data capital that is among the largest in Finland. Our data governance processes ensure that the quality of data is as high as possible, enabling us to provide benefits for the customers of OP Financial Group. Our data governance is based on jointly agreed roles, principles and operating models.

We develop our data governance within the following three main themes: a) data quality, b) availability and usability of data, and c) confidentiality and privacy of data. OP supports its data governance and information architecture with strengthened structures and operating models that enable us to maintain and increase the quality and business usability of our data capital. We have also ensured that we process and use data in a shared and consistent manner in line with OP's core values and the regulations that govern our operations.

Elements of data governance

The purpose of data governance is to ensure comprehensive value creation for OP and its customers through the use of data. Safeguarding the quality, availability and usability of data and ensuring its confidentiality and privacy are at the core.

Compared to other sectors, the financial sector is highly regulated. This places higher requirements on our data governance and processing, too. OP makes sure that it meets those requirements and evaluates its regulatory compliance on a regular basis, in line with its operating models and core values.

Successful implementation of the new data governance model

In 2019, OP implemented its revised data governance model, including the related roles. This has improved the governance of all categories of data capital, in particular as regards customer and product data. The key reforms include the transfer of data ownership to the various business lines, the data quality correction process, the gradual harmonisation and centralisation of customer data from local to Group level, and the harmonisation of terminology.

Following the new data governance model, the ownership of the various elements of data capital has been transferred to the various businesses. Previously, data was owned by functions that were responsible for each data warehouse. The new way of thinking and implementing data ownership in business organisations has rapidly made OP's data governance more customer-driven and has integrated it in daily operations.

OP's data governance model includes two key roles: data owner and data steward. Data owners are the business's best experts in the use of data in their area of responsibility. They make sure that data is developed and used in accordance with agreed policy decisions, rules and legislation, and that the quality of data is suitable for its intended purpose. Data owners cooperate with data stewards, who have detailed knowledge about the characteristics of data included in systems, and who make sure that the data is in good order.

Continuous improvement of data quality

By developing the quality of data, we ensure its correctness and reliability, positive customer experience and the regulatory compliance of our data processing. In a diversified financial services group such as OP, data has been scattered across numerous systems and data warehouses.

For this reason, we may have had several different manifestations of a customer and that customer's data. The implementation of processes related to data quality plays a key role in promoting an overall quality thinking and in maintaining and improving the value of our data capital.

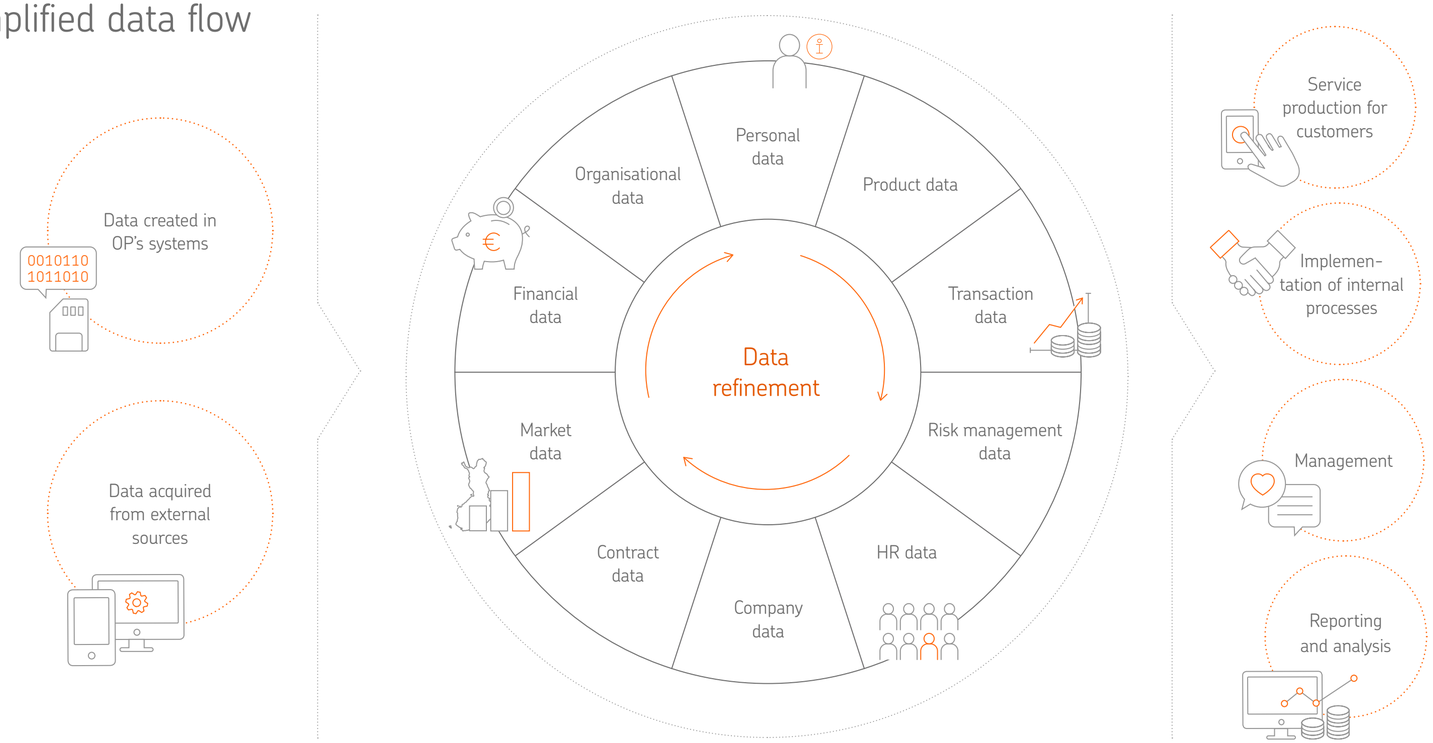
Minna Sulkakoski
Product Owner,
Data Governance

”The data quality correction process has proven its efficiency from the very first steps. Since any OP employee can report a defect they have detected in data quality, we can determine its root causes and correct it quickly. As incorrect data is corrected at source so that it no longer streams to business processes, we will achieve substantial improvements in efficiency.”

”Following the new data governance model, the ownership of the various elements of data capital has been transferred to the various businesses.

At OP, data quality management serves the various businesses and processes as well as the development of information systems. It helps improve the usability of data and makes data quality transparent to all users and developers across the organisation. This also enables us to identify and address costs arising from deviations in data quality.

OP's simplified data flow



Pasi Ruhanen
Tribe Lead
Data Warehousing

"The transfer of a player of the size of OP from decentralised data warehousing to a centralised model is an extensive, gradual transformation. Centralised data warehousing enables us to upgrade data quality and availability, improve advanced analytics and support the streaming of data to the various processes and services."

Data warehousing is moving to the cloud

Based on its ICT policy priorities, OP continues to transfer to centralised data warehousing and governance. In 2019, we launched the transfer from dozens of decentralised data warehouses of different age to centralised data warehouses, both on the cloud platform and in OP's data centres. Based on OP's ICT policy priorities, the role of cloud platforms will increase in the future. Data warehousing will be centralised at Group level. At first, this will cover banking and insurance operations in Finland and the Baltics.

The centralisation of data warehousing and governance will progress in stages. At present, approximately one-fourth of the data warehouses have been transferred to centralised data warehouses. This has involved prioritisation on the basis of the data warehouses' lifecycles and OP's business needs so that the oldest warehouses with a high utilisation rate and high performance requirements will be transferred first.

Centralised data warehousing enables us to upgrade data quality and availability, improve advanced

analytics and the streaming of data to the various business processes and to the production of services targeted at customers. Meanwhile, a centralised solution maintains and improves the quality and correctness of data. A centralised real-time solution optimally supports the general principles of data protection, such as the accuracy of data.

Data governance and management model

OP ensures that it applies consistent procedures in all decision-making related to data by implementing roles and bodies specified in the data governance model. The model describes the various decision-making parties and roles, and responsibilities linked to those roles, in the use and processing of data.

The governance model also includes parties responsible for data quality as well as support organisations that modify processes, applications, systems and solutions. Furthermore, the governance model defines the roles and responsibilities of data processors. A data governance organisation, and roles based on an agile way of working in self-managed teams were implemented in 2019.

OP's data governance model

Governance model and roles

Decision-making focus	Decision-making forums
Strategic OP Financial Group level	Data Governance Management Team
Tactical Data area specific level	Data area specific working group Customer / Product
Operational Business- or sector-specific level	Data governance processes and development areas

People and competencies

Building the best data capabilities

The importance of data capabilities has increased rapidly in OP's operations. It has also changed competence needs both in the short and long term. Our goal is to ensure that each OP employee has the best possible data competencies in their tasks.

OP's strategy specifies the utilisation and management of data as an important area of development that enables us to achieve various benefits. Data utilisation involves competencies that are needed for the professional governance, strategic planning and broad-based utilisation of data in OP Financial Group's daily business. Based on individual roles and motivation, we can develop these competencies through on-the-job training, learning from colleagues, instruction via internal and external networks or training events, and through self-study. We identify and document competence areas in competence reviews and assessments, and agree on competence development plans.

Almost

500

OP employees already work in specialised data development and refinement roles. This represents

7%

of all personnel.

Digital skills as part of all OP employees' basic skills

OP began to develop its employees' competencies for the digitalisation of the financial sector in good time, and we are in an excellent position to meet future challenges. In 2017, we defined a general digital skills framework which specified the key areas of competence and their definitions at basic and expert levels. This framework guides our discussions and competence development planning.

Today, OP has clear data-related operating models and responsibilities. Our various tribes and teams have specialised top professionals in numerous roles related to data governance, exploitation, analysis, quality management and risk management. In addition to these specialists, we want each OP employee to have good basic skills in data security and the use of data in their own work. We have also engaged in wide-ranging discussions about the opportunities provided by artificial intelligence today and tomorrow, and have encouraged competence development through internal training events and insightful workshops.

Building a new-era capability profile

A rapidly changing operating environment poses challenges for strategic resource planning, too. In its new strategy, OP anticipates the financial sector's future scenarios from the viewpoint of competition, economy, customer, technology and regulation. In the future, OP's ability to meet customer expectations, competition from new players in the financial sector and changes in the regulatory environment will be increasingly based on data-linked capabilities
.
For this reason, OP has analysed its existing capabilities and future capability needs and designed solutions for building the required capabilities. Key capabilities include fintech and cloud technology, interfaces, agile DevOps methods, AI applications, cybersecurity and data-driven best customer experience.

OP attempts to meet these capability needs by developing existing employees' competencies, recruiting professionals externally or using external experts. In the long run, OP is seeking to perform most of the work based on strategic competencies

Examples of the most common new roles linked to the exploitation of data:

Data Engineer

- Plans and implements technical solutions that contain elements such as data modelling and integration, data warehousing and cloud-based data pipelines.

Data Analyst

- Focuses on the continuous improvement of business processes by using customer and business data and various analytical models.

Data Scientist

- Solves complicated business problems by building solutions based on data and machine learning.

Product Owner

- Head of the agile team who understands customer needs and leads the team's operations by maintaining and prioritising its work. The Product Owner splits and prioritises bigger projects and is responsible for coordination between teams in cooperation with other Product Owners.

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The importance of data capabilities has increased rapidly in OP's operations.

with its own personnel. As regards important technologies, OP's goal is to perform half of this work with its own personnel. We will continue to use external partners and professionals in the future, too.

Comprehensive data protection competencies

One of the basic competence areas is flawless data protection. The Data Protection Centre of Excellence provides role-tailored data protection training for the whole personnel. In addition, each OP employee must complete basic data protection training at regular intervals. Data protection matters are closely integrated in the various operations. In addition, a number of people working in OP's tribes receive more advanced data protection training. This supports daily data protection work in areas such as product and service development.

Agile operating model: comprehensive support for the work of data professionals

The number of roles linked with data governance and exploitation has increased exponentially at OP. New needs will emerge across the whole data value chain, from data governance to application and service development. In addition to software developers and technology professionals, OP employs an increasing number of Data Scientists (analysis-driven refinement of data), Data Engineers (data process development) and Data Analysts (data analysis for business needs). Meanwhile, the Product Owner leads the whole team in order to meet the needs of internal or external customers.

By far the largest part of OP's data professionals work in the tribes and teams of the Development & Technologies (D&T) unit, in line with the new agile way of working. The new way of working was introduced in the D&T unit and partly in Retail Banking operations at the beginning of 2019. Their activities are organised into self-managed, multi-skilled teams that provide high-quality response to customer needs as quickly as possible.

Protection

Protection of data and operations, and risk management

A rapidly transforming digital environment involves rapidly changing threats and risks, too. OP protects the data of its customers, employees, partners and other stakeholders as well as OP's other data capital through proactive risk management, comprehensive protection procedures and internal operating models. OP is increasingly exploiting its data capabilities and financial intelligence in order to identify fraud.

Data-related risk management covers the risks of OP and customers as comprehensively and proactively as possible. OP continuously identifies and analyses risks, and plans and reports the related procedures in accordance with a Group-level data governance model and organisation, taking account of regulatory requirements. Risk management related to OP's data balance sheet covers both data assets and data capital, including the processes between them.

In a rapidly changing world, new data-related cyberthreats and risks may emerge in a short period of time. OP has confirmed practices for monitoring internal and external operations and analysing its security environment. The importance of capabilities for observing any harmful measures affecting digital processes, products and services is rapidly increasing. This enables early identification of risks, operational deviations and potentially emerging new threats.

Risk management related to data capital

Risk management related to data capital focuses on risks associated with data acquisition, processing, storing and disposal. These risks may be divided into system, process and property risks, mainly on the basis of the technical quality and governance of data, management of the regulatory environment, and the level of data security. These risks increase if the data is of poor quality or scattered, contradictory or obsolete.

As regards personal data, risk management related to data capital also addresses risks incurred by data subjects. Data protection management models have been modified so that they function together with risk management related to data capital.

Other identified risk factors include operational data security threats, such as data system break-ins, data leakage and other unauthorised use of data. Other factors increasing risk include low usability, performance or reliability of systems and services.

As data-related regulation is becoming more complicated and requirements are increasing, the importance of so-called compliance risk management is growing in all operations.

Protection of customer data and the rights of data subjects

OP takes the protection of customers' data and data security seriously. Our operations meet local regulatory requirements in all countries that we operate in. We ensure the confidentiality, correctness and usability of personal data through careful data processing and by applying several protection methods that compliment each other. OP protects personal data with appropriate technical and organisational safeguards. Such methods include proactive and reactive risk management and the use of firewalls,

In 2019, OP processed

362

requests by customers to access their personal data as recorded in banking and insurance operations.

Open and transparent information on personal data processing at OP is available to customers.

encryption techniques, secure data centres and access management and safety systems.

We also make use of security planning, grant and supervise user rights in a controlled manner, ensure the competence of personnel who process personal data and choose our subcontractors carefully. We update our internal practices and guidelines regularly and whenever needed.

OP stores data necessary for the customer relationship at least throughout the customer relationship, after which the retention period depends on the type and use of data. OP complies with statutory obligations concerning the storage of data.

Open and transparent information on personal data processing at OP is available in the data protection section of the op.fi website. This includes more detailed information on sources from which OP gets, and to which OP regularly discloses, personal data.

OP's customers also have the right to check their personal details, demand correction of inaccurate or incomplete information, and demand the deletion of unnecessary or out-of-date data. Comprehensive information on these rights is available at www.op.fi/dataprotection/your-rights.

Risks affecting data assets, services and customers

Risk management related to data assets primarily focuses on ensuring the safe use of services by OP's customers and managing risks related to the exploitation of data in business.

Risks affecting customers are related to customers' personal data security, identity theft, and hoax and phishing messages. OP's website provides instructions for ensuring secure transactions for personal and corporate customers.

OP clearly informs its customers about its contact channels and principles and provides guidance for customers who suspect that they have fallen victim to fraud.

OP monitors external data security threats that may affect customers and warns them regularly on its website and mobile bank. In recent years, the number of these alerts has remained high and the range of threats has continuously increased. Thanks to these alerts and the improvement of customers' general data security skills, materialisation of threats is rare.

Before the company launches any products or services or adopts new operating models or systems, it assesses their risks using procedures as laid down by the central cooperative's Risk Management. If the planned processing of personal data so requires, OP also performs a data protection impact assessment required by law. OP only provides customers with products and applies business models that have been approved at Group level.

Data protection organisation

Data protection activities are coordinated by OP Financial Group's Data Protection Centre of Excellence that consists of a broad range of in-house competencies. In 2019, new roles based on the agile way of working were introduced, bringing risk management and data protection professionals to the various teams at OP. Tribe-level roles include Security and Privacy Specialists and Compliance Engineers who are responsible for practical data security and data protection work. This reform improves early identification and prevention of risks and threats.

OP further strengthened its compliance operations and resources related to data protection and data security in 2019. The implementation of financial intelligence has increased automated control and the number of control events.

OP has a strong data protection organisation that covers all operations and companies, including those in the Baltic countries. OP has five Data Protection Officers required by law, three of whom work in the Baltic businesses. Each personal data file has its responsible persons. Individual banks also have contact persons for data protection matters. In addition, OP's Customer Service has a separate team that handles customers' requests and questions related to personal data processing.

Data protection services were further developed

OP updated its personal data protection principles and practices as part of the implementation of the EU General Data Protection Regulation (GDPR). This was carried out by a separate data protection project in 2019. The operating models created during the project have been implemented and further developed to meet the changes in the operating environment. New development work in the field of data protection included the introduction of the My profile feature on OP-mobile, as well as a project aimed at improving the management of customer consent for e-marketing.

Management of data protection deviations was improved

For a long time, OP has had efficient operating models for rapidly responding to data protection deviations; in particular, to personal data breaches referred to in law and minimising any adverse effects of such deviations. Every data security breach occurring at OP Financial Group is addressed in a centralised manner, including an assessment of the need to report it to authorities. In almost all cases, OP informs the affected data subjects about the data security breach, even if this is not absolutely necessary due to the minor nature of the breach.

In 2019, OP also launched a process enabling it to control the management of data security breaches as automatically as possible, by using the tools of internal control.

Internal control

Managing compliance risks forms part of internal control and good corporate governance and, as such, forms an integral part of business management tasks and the corporate culture.

OP further strengthened its compliance operations and resources related to data protection and data security in 2019. It has increased control and internal auditing and further sharpened the focus of actions on the basis of risk assessments. The implementation of financial intelligence has increased automated control and the number of control events.

Key areas of development include anti-money laundering and anti-corruption. OP has significantly increased the scope and efficiency of control. In addition to inquiries, it uses automated control to an increasing extent. Instead of random sampling and observations, control has been extended to cover considerably larger transaction volumes. The purpose of comprehensive control is to prevent both criminal activities affecting customers and possible criminal activities committed by customers. Customers are actively warned of any impending threats.

Guidelines, advice and support concerning compliance within OP Financial Group are the responsibility of the central cooperative's Compliance organisation that is independent of business lines/divisions. Responsibility for local regulatory compliance and its supervision within OP Financial Group entities rests with senior and executive management and all supervisors and managers. The

Compliance function assists senior management and executive management and business lines/divisions in the management of risks associated with regulatory non-compliance, supervises regulatory compliance and, for its part, develops internal control further. In addition, everyone employed by OP Financial Group is responsible for their part for regulatory compliance.

Data protection deviations

OP Financial Group received 11 substantiated customer complaints concerning the processing of personal data or breaches of customer privacy in 2019. The total number of complaints was calculated by counting only one complaint for each case where several complaints were filed concerning a single event (for example, a mailing error).

In 2019, OP Financial Group's internal controls identified a total of 750 cases that can be classified as personal data breaches under the GDPR. The figure also includes, for example, breaches attributable to human error that are unlikely to compromise the rights and freedoms of natural persons

Key figures and ratios

OP's service channels	2018	2019	Change
OP's digital channels' NPS	52	53	+1
Online and mobile services (millions of visits per month)			
OP.fi	8.86	8.47	-4.4%
OP-mobile	22.18	25.19	13.6%
OP Business mobile	0.62	0.85	37.1%
Pivo mobile application visits	3.7	4.4	18.9%
eServices Agreements (1,000)			
Private customers	1,881	1,937	3.0%
Branches and telephone services			
Bank branches	365	352	-3.6%
... providing both non-life insurance and banking services	323	320	-0.9%
Private Banking branches	42	42	0.0%
Customer contacts in telephone service per month	340,180	351,102	3.2%
Social media			
Followers on Facebook (OP Financial Group and OP cooperative banks)	345,248	376,979	9.2%
Followers on Twitter	38,665	42,515	10.0%
Followers on LinkedIn	30,816	45,355	47.2%
Followers on Instagram	9,903	14,953	51.0%
Followers on Youtube		4,140	

Customers (1,000)	2018	2019	Change
Customers in total	3,839	3,894	1.40%
Owner-customers	1,911	2,003	4.80%
Banking customers	3,545	3,591	1.30%
Non-life insurance customers	1,545	1,599	3.50%

Key figures and ratios for services based on financial intelligence	2019
Unique users of the My Finances service	400,000
Digital home loan decisions made by the Credit Engine	~ 9,000
Price estimates generated by the home price assessment tool per month	60,000
Chats completed by the Opotti chatbot (banking services)	~ 70%
Chats completed by the Viljo chatbot (insurance services)	~ 50%
Share of customers very satisfied with answers of the Opotti chatbot	67%

Data capabilities and competencies	2019
Employees of OP's central cooperative working in data development and refinement tasks	480
... share of the entire personnel of OP's central cooperative	7%
Employees trained in the use and management of financial intelligence	~ 500
Number of new services using financial intelligence launched in 2019	20 kpl

Data capital	2019
Customer details maintained through the My Profile service	~ 250,000
Amount of data in analytical databases	519.6 TB
Number of electronic documents	520,000,000
Amount of paper files	81,000 metres
Number of log events collected by centralised log management per day	~ 97,000,000,000

Data protection and internal control	2019
Processed customer requests for access to personal data*	362
Number of reports sent to authorities per month	~ 20,000
Customer complaints related to personal data processing or privacy protection	11
Cases categorised as personal data breach (see report page 39)	750

For security reasons, OP doesn't publicly report key figures related to anti-fraud and anti-money laundering.

* In finance and insurance operations

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