



# Implementing Vault Core

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09

KEY INSIGHTS  
FOR PROJECT SUCCESS



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# Modernising with Vault Core

Driven by the need to meet evolving customer expectations and boost competitiveness, many existing banking organisations have invested heavily in their end-user experiences. Their potential, however, has been held back by the limitations of legacy back-end systems.

As a result, these organisations are seeking to modernise their core banking systems with a platform that lives up to the needs of banks and their customers. Many banks – both existing, and new digital greenfield banks – have already implemented or are considering implementing Thought Machine's Vault Core, a cloud-native core banking platform that is the foundation layer of modern banking. Vault Core is designed to provide the flexibility and scalability to bring innovative features and products to market faster and more easily.

As an established partner of Thought Machine, we've gathered together some of the key points we've learned from a wide range of implementations, to help you make sure the move to this cloud-native core banking platform brings real competitive advantage.



## Why are banks choosing Thought Machine?

### INNOVATION AND FLEXIBILITY

Vault Core offers unparalleled product configurability and personalisation, on one common platform

### RAPID PRODUCT LAUNCH

A modular approach and use of smart contracts written in Python code to create products slashes time-to-market, allowing banks to meet constantly changing customer needs quickly and more easily

### ECOSYSTEM APPROACH

Vault Core is a foundational component of a bank's architecture. It is a lean, fast core, which allows easy integration with third-party and partner systems across the full banking stack via APIs

### SCALABILITY

The cloud-native platform scales easily, making it possible for banks to pay only for what they need right now. Vault Core's technology scales to match the business complexity and size of any bank

### REDUCED COMPLEXITY AND TCO

A modernised, simplified core banking platform with greater automation is easier and less expensive to manage

# 01 Identify the drivers for change

A full and comprehensive understanding of the internal and external drivers for a new core banking platform is essential before replacing it, or creating a new digital bank.

Technology challenges often include low flexibility and poor time-to-market, high maintenance costs and difficulty integrating with other solutions. Business challenges could include the need to integrate with modern fintech ecosystems, to create a more flexible architecture to respond quickly to market pressures, or to create a platform to offer customers more personalised banking products.

An initial analysis of challenges and goals creates a foundation for preparing the budget, taking into account the human capital that is available and the skills that are needed for effective core banking modernisation.



## 02

# Thought Machine is part of a broader ecosystem

A traditional core banking system is monolithic and contains many different functionalities and subsystems that cover end-to-end business logic or business processes.

The innovative design of Thought Machine's cloud-native core banking platform, Vault Core, offers unparalleled product flexibility and personalisation, enabling scalability and growth.

Moving from the monolithic architecture of traditional core banking systems, to a modular or functional component architecture where Thought Machine is the core component in a broader ecosystem of functions unlocks unparalleled autonomy and flexibility for banks. Vault Core integrates via APIs with other systems such as payment hubs and gateways, client management, and risk and fraud management, to enable full functionality across the banking stack.



## 03

# Consider the possibilities offered by modernisation

With a cloud-native core banking platform, and a microservices architecture that is API-driven and can more easily be integrated into a broader fintech and third-party ecosystem, look at the new possibilities that have opened up for your business without the limitations of a legacy platform.

For example, which new features or products can you create to respond to your customers' needs now that your time to market is reduced? Can you take more risks now that there's greater scope for faster trial and error? Can you create whole new marketplaces? Which other organisations and solutions can you integrate with? How can you get more from your own data? Can you better consume data from other sources?

Having identified these possibilities, you can then set goals to capture these potential business, technology and operational benefits.



### SUCCESS STORY:

#### A rapid launch with Thought Machine for a Hong Kong digital bank

GFT helped the bank launch in just 18 months to quickly capture market opportunities, deploying Vault Core, running on AWS, as its core banking platform.

The bank quickly encountered great success, reaching 160,000 customers in the first year of operation, and 500,000 customers by its third anniversary.

Furthermore, it has collected more than 50 awards worldwide, highlighting its strong, trusted relationship with its growing customer base.



## 04

# Approach the implementation as more than a technical project

Although core banking modernisation is a highly complex technical undertaking, it often feeds into wider initiatives such as business process improvements, launching new products and even full-scale business transformation.

As a result, there are likely to be wider objectives and challenges to consider beyond the technical issues, such as the regulatory aspects of moving data and workloads to the cloud or of opening up a new market.

This means that a core banking modernisation project needs to involve people from many different business departments from an early stage, such as change management, risk, compliance, finance and marketing. This helps to make sure that the project will bring tangible benefits to the wider business, and that all the challenges and issues are taken into account from the beginning.

## 05

# Create a target architecture

The adoption of a modern, cloud-based core banking system involves a transition from a monolithic architecture to microservices, as well as API-based integration with third-party solutions and fintechs.

The target architecture recommended by GFT splits all banking systems into six layers. Each of these layers has specific responsibilities and interaction points. This approach makes the system design clean and maintainable, while protecting it against incorrect interactions.





# Layers in the GFT target architecture

## 01 FRONTEND

All the customer-facing and bank-internal channels interacting with the bank systems. This layer includes mobile applications, web applications, and the back office applications used by bank employees.

## 02 BANK API

A set of unified APIs accessible by all the front-end apps, connecting to backend services. In this layer, multiple security and auditability concerns are solved.

## 03 BUSINESS LAYER

Microservices implementing business journeys and core banking configuration. This layer handles most of the business complexity around running banking products. Some functionalities are delivered by external third-party systems.

## 04 RECORD

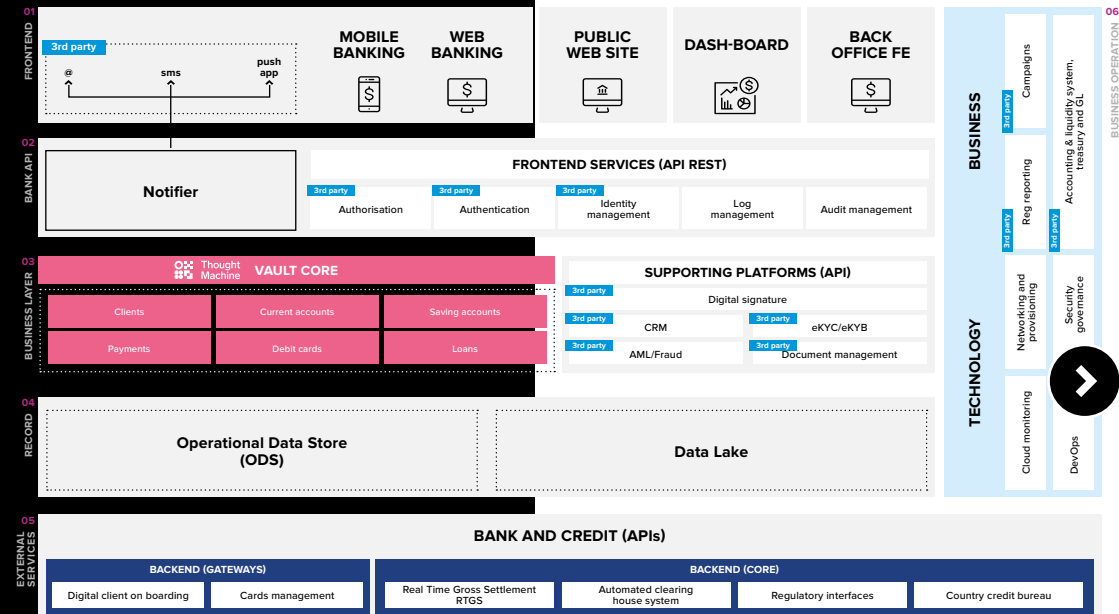
Data management and analytics.

## 05 EXTERNAL SERVICES

Systems and services that interact with external, often country-specific systems related to card processing, customer management, payment and transaction processing and compliance systems.

## 06 BUSINESS OPERATION

Cross-cutting components interacting with other layers.



[VIEW IMAGE IN ORIGINAL SIZE](#)

Image: Layers in the GFT architecture

## GFT's proposed target architecture is based on the following principles:

- ▣ Leverage cloud-managed services to reduce costs and shift to a pay-per-use model
- ▣ Use cloud agnostic patterns whenever it is a globally recognised standard
- ▣ Opt for services delivering cloud-native security

## 06

# Split your business into domains

Use a component architecture and Domain-Driven Design (DDD) to split functionalities into Bounded Contexts, as shown here. This diagram focuses on the business layer and the organisation of microservices, as well as on Core Banking system configuration.

A good understanding of Bounded Contexts and their boundaries is the key to independent microservices and effective development of large systems. The split of Bounded Contexts recommended by GFT is based on the knowledge gained from multiple neobanking projects delivered over 35 years of working in the banking industry.

### These Bounded Contexts are:

#### 01 CUSTOMER

All the customer processes, such as onboarding journeys, are implemented here. This is usually the first Bounded Context that the customer interacts with.

#### 02 PRODUCTS

This large Bounded Context is often split into smaller ones, based on product categories (such as deposits, loans and investments). Different products have different features, like lifecycles, supported operations, fees, charges and interest. This Bounded Context closely interacts with the core banking system responsible for product behaviour.

#### 03 PAYMENTS

This is where integration with payment systems takes place, usually through a payment gateway, and where most of the non-card transactions are initiated.

#### 04 TRANSACTION

Where customer-facing transactions are stored for the display and where customer statements are generated.

#### 05 LIMITS

Customer limits can be managed on multiple levels, which is why limit management should be externalised in some banking ecosystems, because no other Bounded Context has all the information required to implement all the limit use cases.

#### 06 CARDS

Card provisioning, card management and card transaction processing happen here, often through integration with third-party systems.



### 07 FRAUD AND ANTI MONEY LAUNDERING (FRAML)

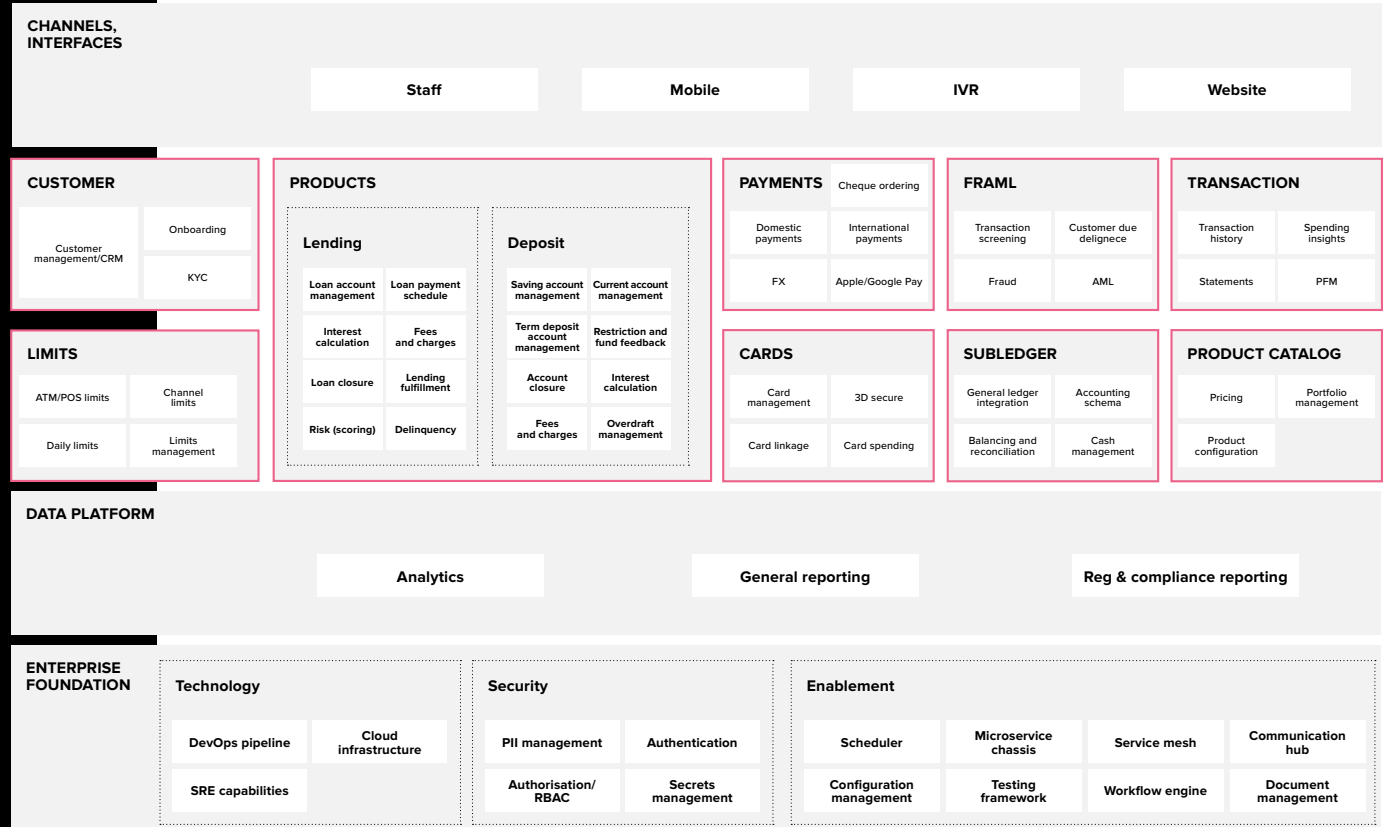
AML/compliance and antifraud functionalities are implemented here, usually by interacting with third-party AML and antifraud solutions.

### 08 GENERAL LEDGER

Money movements within the core banking system must also be enriched and stored in the bank's General Ledger for proper accounting. Any other integrations needed to provide the ledger with data happen within this Bounded Context. Microservices from this Bounded Context are responsible for mapping core banking system postings to the General Ledger entries.

### 09 PRODUCT CATALOGUE

Responsible for product management, including product creation, configurations, versioning, and migration.



Bounded context

[VIEW IMAGE IN ORIGINAL SIZE](#)

Image: Bounded contexts within a domain-driven design



07

## Define standards and metrics

The relevant standards for transformation should be identified and shared across all teams, so that in later stages of the project when changes are likely to happen, there will always be a standard set of guidelines for employees to follow for all work.

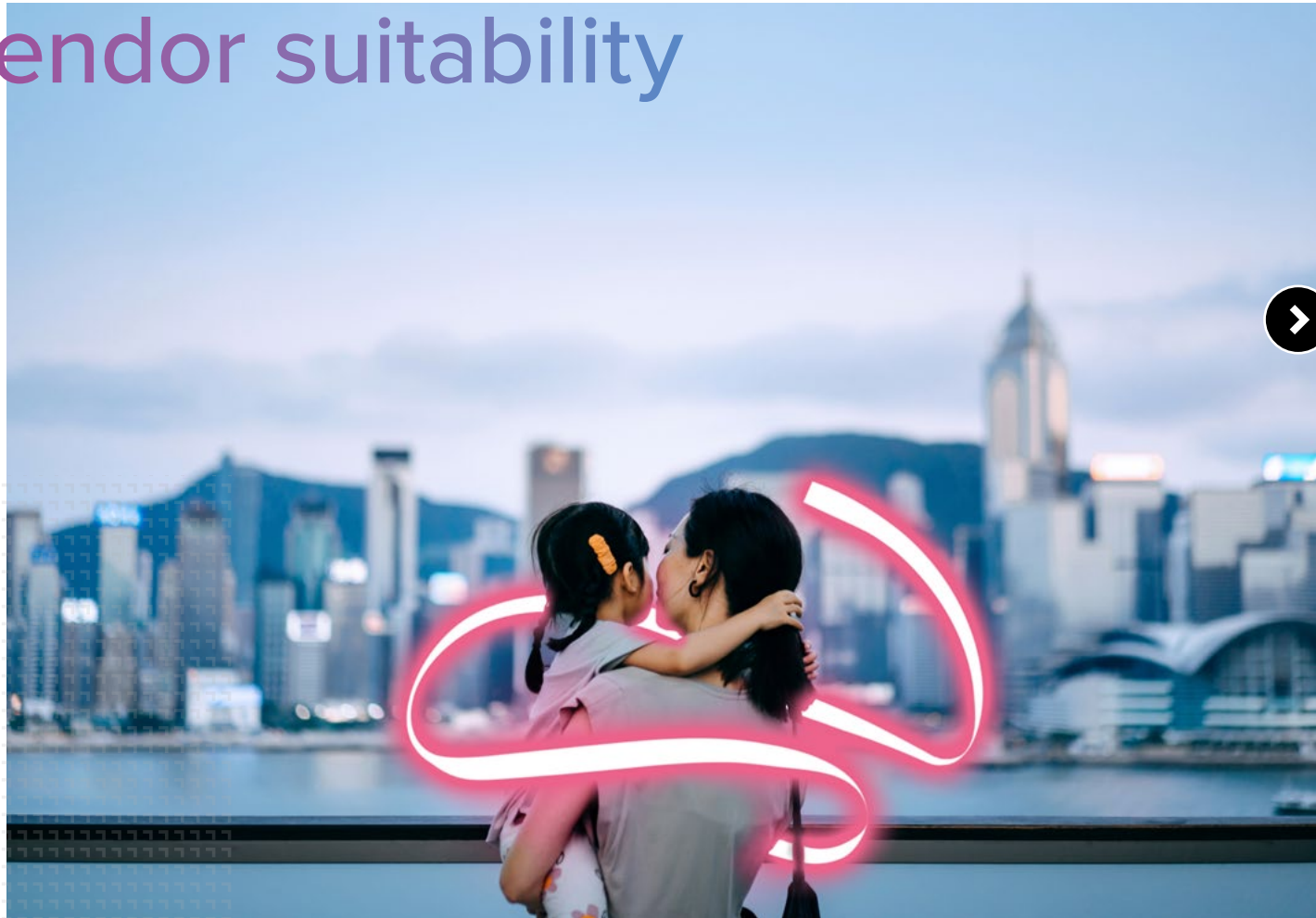
Defining metrics to monitor the progress of work helps to make sure that the project is consistently on track to achieve its objectives within the expected timelines. These metrics could include the reduction in maintenance costs for existing IT applications, an increase in customer satisfaction or shortening the time to market for new functionality and products.

This principle should be extended to the risks involved in modernisation, helping to make sure that any risks identified are monitored and managed as needed.

08

# Use Proofs of Concept to assess vendor suitability

Building a Proof of Concept (PoC) limited to one functional part of the bank's systems allows you to evaluate whether your chosen vendor is the most appropriate to meet the project's business and technical challenges. If it is successful, the PoC can be extended to other functions or product lines. This incremental approach to core banking modernisation reduces the risks that are inherent in this immensely complex project.



09

# Document ongoing modernisation

One of the challenges of legacy platforms is that as core systems age, the original staff who implemented them may move on and there may not be enough documentation for other employees to easily manage these systems.

Modernisation is an ongoing process, and may take years to complete. To reduce the risk of this situation reoccurring, changes and customisations must be properly documented in enough detail and kept updated throughout and beyond the modernisation process.

Cloud-native platforms help to attract younger employees who may be reluctant to work on older, poorly-specified systems, so this also helps with staff retention.



## Build the digital bank of the future with BankLiteX

Developed by GFT in collaboration with Thought Machine, BankLiteX is a modular, end-to-end solution that allows firms to create and deploy a cloud-based, digital banking entity up to three times faster than was previously possible.

BankLiteX reduces risk and time-to-market, and cuts development costs by 40%. With BankLiteX's open architecture, new components can be added easily and products can be ready to launch in weeks, with minimal development.

[> READ MORE](#)

## SUCCESS STORY: RizeMY seizes the digital banking opportunity with Thought Machine

RizeMY, an Islamic digital bank powered by Al Rajhi, was launched in Malaysia at the end of 2022. GFT and Oliver Wyman helped the client to design, build and launch the cloud-based digital bank which is powered by Thought Machine and leverages BankLiteX (running on AWS).

[> READ MORE](#)

# How can GFT help you build a modern core banking infrastructure?

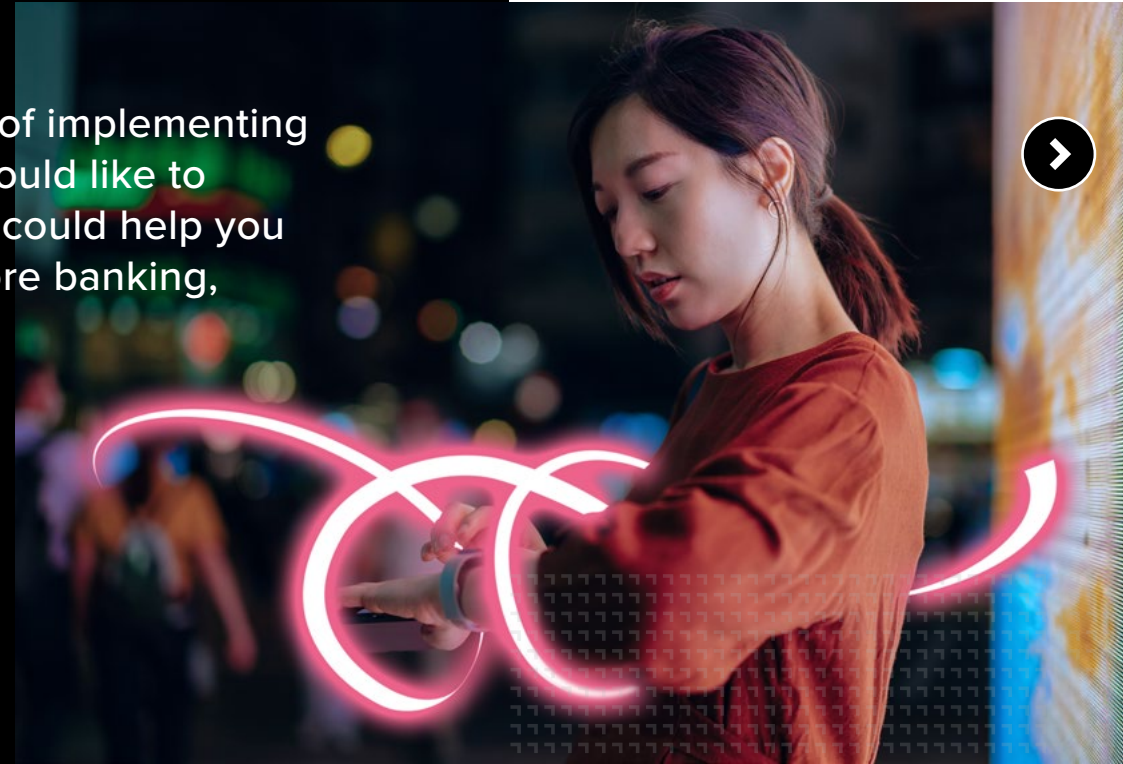
With five Core Banking Centres of Excellence and over 200 experts certified on Vault Fundamentals, our established partnership with Thought Machine means we're uniquely positioned to help your core banking transformation plans succeed.

Vault Core, Thought Machine's next-generation, cloud-native core banking engine, is a part of the solution for banks looking to transform. Vault Core sits within a best-of-breed architecture that our specialists design and integrate. Together, we're delivering some of the most innovative digital banks in the world.



If you're thinking of implementing Vault Core and would like to discuss how GFT could help you transform your core banking,

[CONTACT US](#)



# Our partnership at a glance



Thought Machine partner tier:  
**Premier Partner**

200+

ENGINEERS at GFT are certified and ready  
to deliver Vault Core for customers

8 JOINT CLIENTS

6 banks in Asia

2 banks in Europe

1 bank in America

Accelerator launched:

BankLiteX, a single developers hub  
that enables banks to create and  
deploy a cloud based digital banking  
proposition faster than previously  
possible. It's pluggable components  
such as a pre-defined operating model  
and standardised business processes  
reduce time to market, lower project  
risk and optimise return on  
investment.



# About the authors



**Joanna Aleksandrowicz**  
Principal Consultant, GFT

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Joanna Aleksandrowicz is a senior manager with over 15 years of experience in building comprehensive IT solutions for international financial institutions, mainly in the fields of digital transformation, implementation of legal regulations and digital banking solutions. She has been with GFT Poland for 10 years, during which time she has built a business consulting team and has been responsible for consulting services.

Joanna is currently co-leader of the GFT Core Banking Center of Excellence in Poland and a leader of the Polish Bank Association working group, established to verify the Polish market potential for the modernisation of cloud native core banking systems.

She is a co-author of the report "The Future of Core Systems. Is it time for the cloud? Modernisation of core banking systems on the basis of new IT solutions." > [READ THE REPORT](#)



**Francisco Gimilio**  
Director, GFT

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Francisco Gimilio currently leads the GFT Core Banking Center of Excellence in Spain. He has over 20 years of experience in the banking sector, in both delivery management and business development roles. Throughout his career, he has worked with some of the world's leading and largest financial institutions in retail, corporate and investment banking.

Francisco has experience across major digital transformation programs in both the European and American markets, managing large distributed multidisciplinary teams. He has led multiple end-to-end neo core banking projects. He has a deep understanding of market developments and evolving business needs, enabling him to advise customers on the best solutions for their specific challenges.



**Przemysław Juskiewicz**  
Delivery Executive, GFT

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As an energetic Delivery Executive, Przemysław Juskiewicz leads the delivery of pioneering fintech projects for some of the largest banks in the world. He specialises in green and brown field Thought Machine Vault implementations. Przemysław's expertise includes the rapid building of dispersed, international teams, often consisting of several dozen highly-qualified engineers.

In his role at GFT, Przemysław works at the intersection of highly different cultures, managing fintech cloud projects in the Asia-Pacific and EMEA regions.

**If you'd like to speak to the authors,  
why not reach out to them on LinkedIn?**

# ABOUT GFT

## Shaping the future of digital business

GFT is a digital transformation pioneer. By leveraging next-generation technologies, we enable clients to boost their productivity with intelligent software solutions. We focus on Digital Finance, Enterprise AI & Data Solutions, and Platform Modernisation.

GFT's strengths include deep technological excellence, a strong ecosystem of partners, and industry expertise. We are agile@scale and boost digital transformation for clients from the finance and insurance sectors, as well as the manufacturing industry. GFT talents create, implement, and manage software applications to enable innovative businesses while complying with regulations.

With locations in more than 15 markets around the globe, GFT ensures proximity to its clients. We draw on over 35 years of experience and a global team of over 10,000 determined talents. GFT provides them with career opportunities in the most innovative areas of software engineering. The GFT Technologies SE share is listed in the SDAX index of the German Stock Exchange (ticker: GFT-XE).

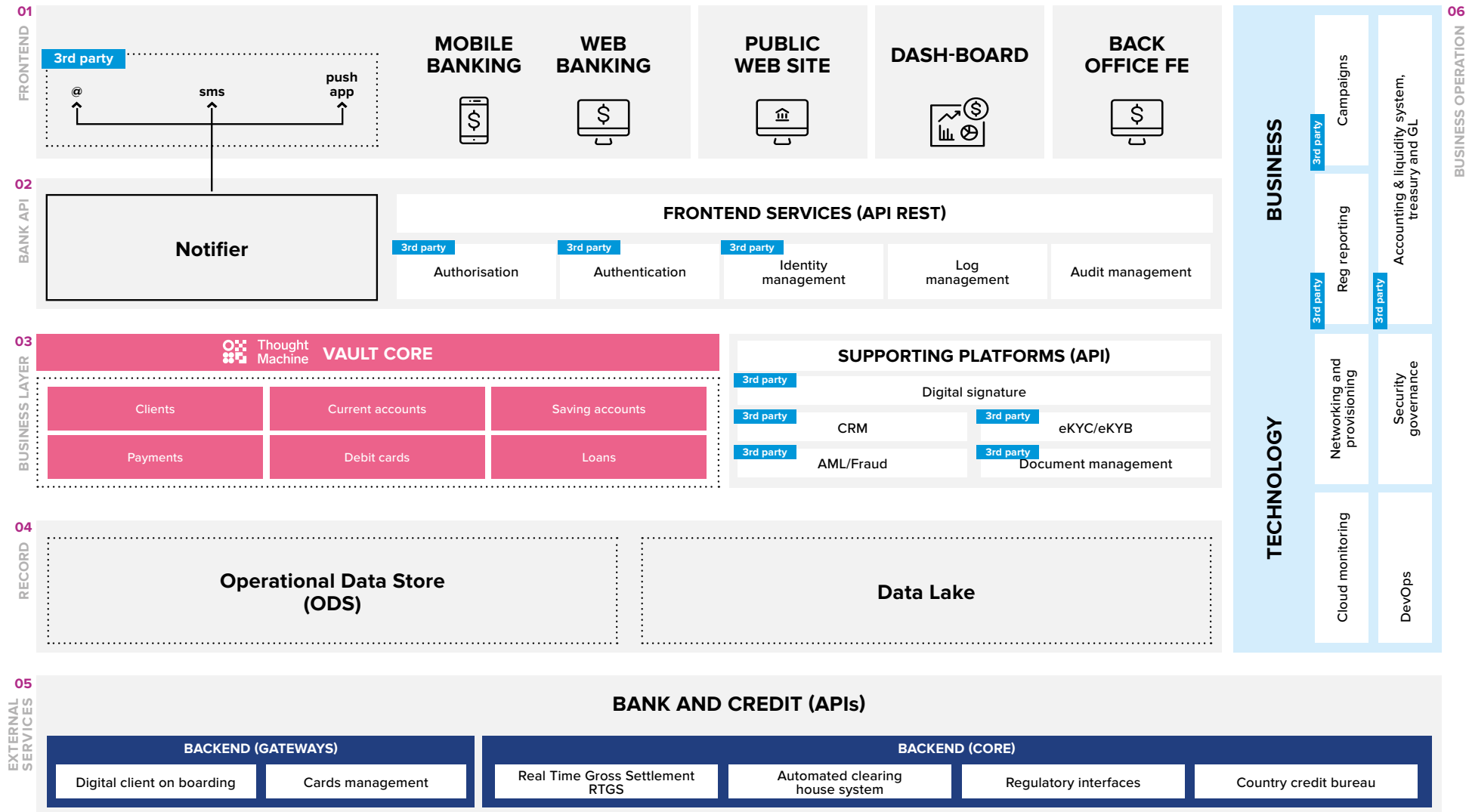


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Image: Layers in the GFT architecture

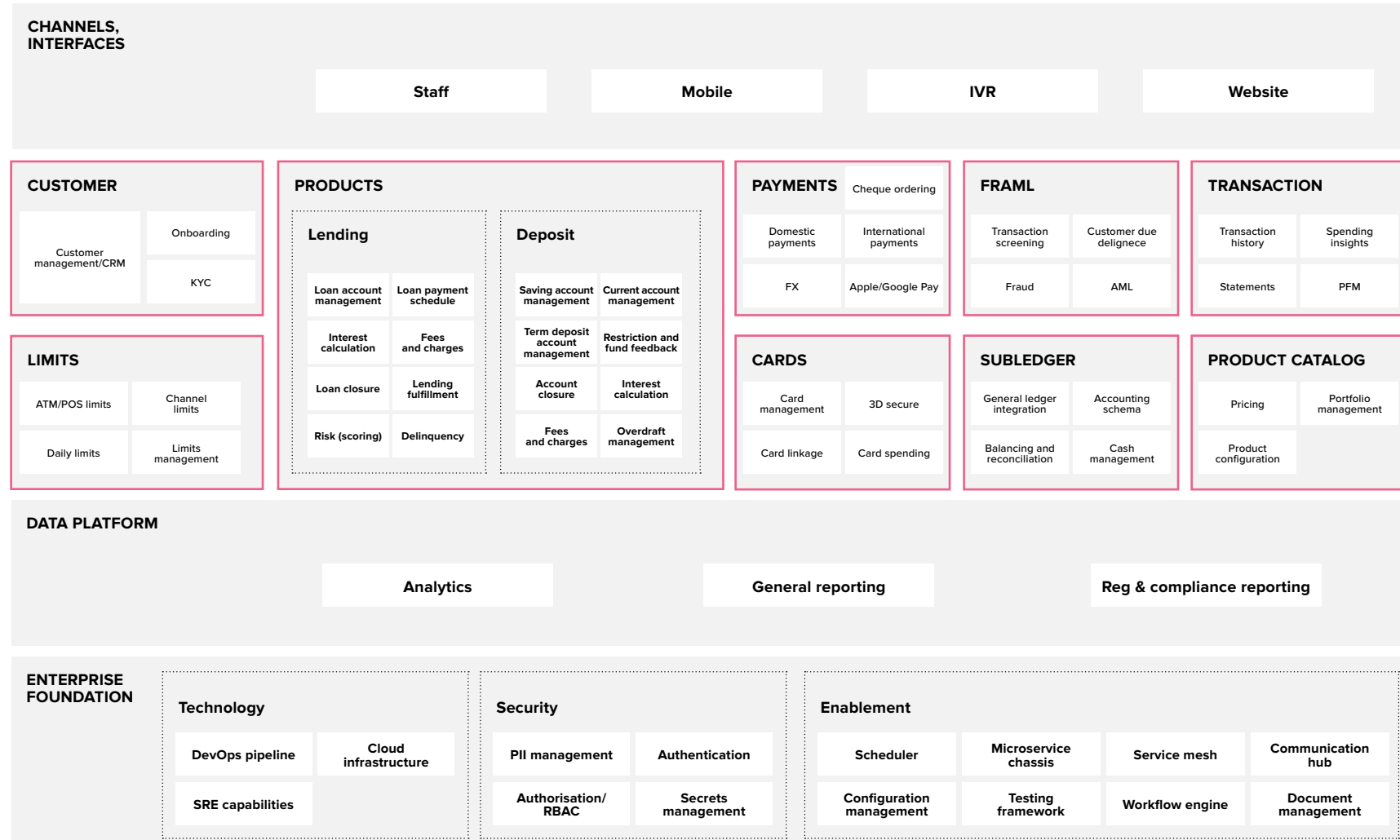
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## Image: Bounded contexts within a domain-driven design

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Bounded context