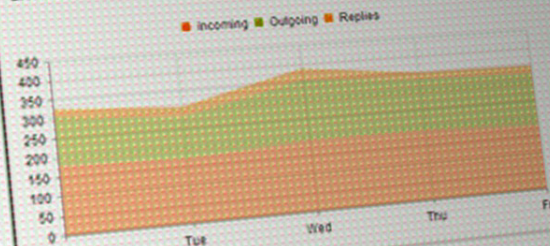


- Dashboard
- Cases
- Tasks
- Documents
 - Incoming Documents
 - Outgoing Documents
 - Unpublished Documents
- Email
 - entro@fivedegrees.is
 - entro@fivedegrees.nl

Emails



Documents

3

Incoming documents

29

Generated documents

My Work



Tasks

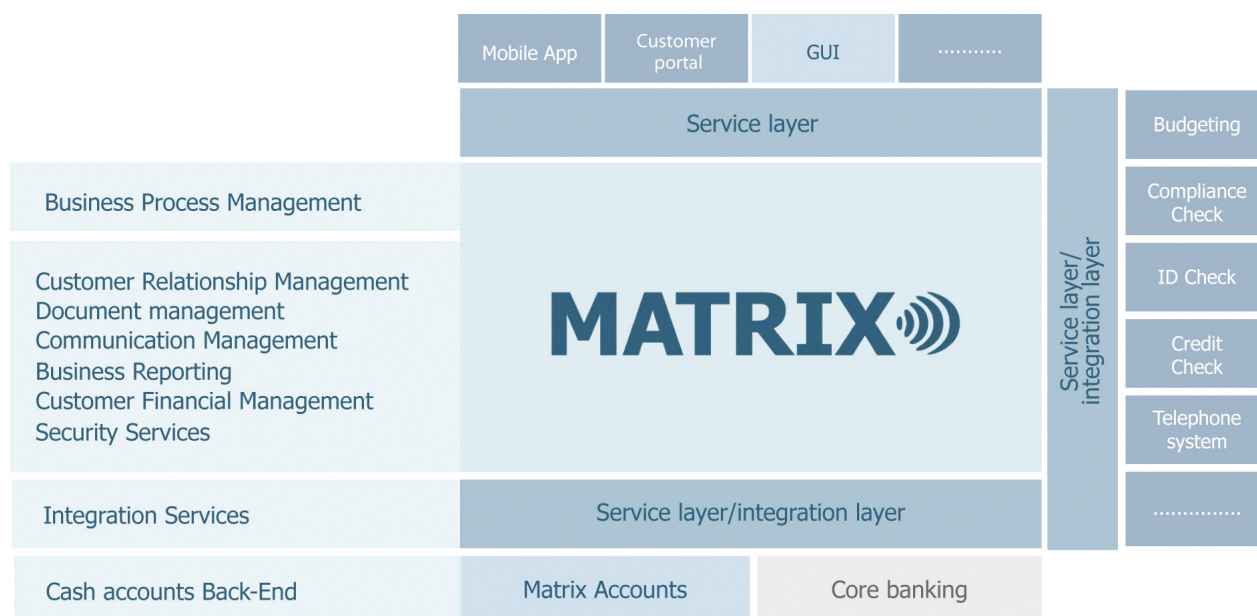
Matrix in more detail

five degrees
Markt 15
3621 AB Breukelen
The Netherlands

Matrix in more detail

Functional Architecture

Matrix is a sophisticated banking platform using state of the art technology to offer functionalities that any modern financial services operation needs independent of client segments or the products and services that are rendered. To achieve this, the core functionalities in Matrix include: Business Process Management, Customer Relationship Management, Document Management, Communication Management, Business Reporting, Customer Financial Management and Security Management.



Matrix Accounts

Matrix is capable of connecting to any (legacy) core banking system. An unique selling point to incumbents that want to move to next generation banking without having to replace their core systems. Matrix has proven connectivity to well-known systems like Olympic, Thaler and Navision Financials. Some Banks however prefer a full new, legacy free set up. With the cash accounts back end system – Matrix Accounts – Five Degrees is able to provide a front – to – back solution without the requirement of an existing back end.

Matrix Accounts is providing the core functionalities of a back office for running cash account products. The main difference between this system and other legacy back office systems is the flexibility and ease of configuration of products. Also the system is designed multi-currency, multi-centre, multi zone and multi-tenant that allows endless possibilities in implementation and a broad range of possible clients.

Business Process Management

The BPM module efficiently manages, visualizes and logs all banking processes. This includes client onboarding and maintenance for any financial product or service, plus KYC and other compliance related processes. The BPM is integrated with all other Matrix modules and the service layer enabling unprecedented levels of STP. The BPM is able to initiate communication with clients, monitor balances or outside events, check external services to validate certain steps, it logs all steps in any process and allows any person on the system (assuming appropriate rights have been granted) to be part of the workflow. Individual tasks in any workflow can be manual, semi-automatic or fully automatic. They can be performed in sequence or – if desired – in parallel. All business processes can be initialized and started with a single web service call in the Matrix Service Layer.

Matrix comes out of the box with the most important re-usable business processes with underlying workflows, supported by the Business Process Management functionality. These Business processes serve as implementation templates, substantially accelerating a banking operation.

Matrix Business Processes areas:

- **Client Onboarding:** including client communication and connection to external services for Social Security check, ID verification and other compliance services.
- **Self- Maintenance:** facilitating customers to manage their personal details 24/7, without live person interaction
- **Accounts / Products:** supported by the Matrix Dynamic Product definition engine
- **Transactions:** supporting payments, withdrawals, account statements etc.
- **Cards:** supporting real-time linking directly to the card service provider(s)
- **Communication:** supporting all customer interaction methods, including link to Voice (e.g. Avaya, Cisco). Matrix has an integrated Chat function and facilities linking to external Chat services
- **Closure:** account closure, divorce and death of client
- **Compliance:** KYC, CDD and MiFiD related processes

Customer Relationship Management

Matrix includes a highly flexible CRM with an entity structure enabling multiple relationships between persons, corporate and portfolios/accounts. The CRM is fully integrated with the financial information, BPM, Documents and the communication modules of Matrix, i.e. emails, SMS and push messages.

The CRM module fully supports retail activities and corporate structures and gives a full 360° view of all information on all entities as well as all related communication and documents. The CRM can be managed entirely using the WCF service layer or through the Matrix Mid-office.

A rich logical data model is the foundation of the CRM where best practices have been exercised in order to achieve a practical approach in gathering and maintaining CRM related data.



Document Management

The document management module supports storing of the most common file types (Word, Excel, PowerPoint, audio, video, text etc.). The document archiving is fully integrated with the 360° client view. Once documents are stored in Matrix several processes react on them to make them more accessible to the user. This includes generating a thumbnail of the documents for overview, digitally signing the documents to ensure authenticity and text-extraction through the use of OCR to enable full-text search within documents. The document management module is also integrated with the BPM module, ensuring that any incoming or created documents are automatically stored in the right folder. The Document Archiving module is loosely coupled and can easily be replaced or integrated with any existing DMS.

Communication Management

Matrix efficiently manages all incoming and outgoing client communication, ranging from emails and letters to SMS, push messages and call centre contacts. All outgoing communication is template-based, easily configurable without any coding.

Business Reporting

Matrix integrates with Microsoft's Reporting suite for producing business reporting and client statements. It enables the users to run statements and queries on the database using pre-defined reports and present them in any form (on screen, email or push notification) or file type (pdf, Word, Excel, csv). All generated reports are template driven, implying any user of the system can access the reports, if the appropriate rights are granted to him.

Customer Financial Management

Matrix is the centre for all customer related data and it's imperative that all customer-related financial is be stored within the Matrix database. Although product maintenance data isn't part of Matrix there is a lot of customer financial data that belong to the customer and is therefore stored within the Matrix financial data warehouse. This is then used for providing balances and also to maintain the services between the banks and customers on different products. In most cases all products offered to clients go first through the on-boarding processes of Matrix and then later are opened within the back office systems using the Matrix Integration Layer. This method is intended to de-couple the back office systems from the mid & front office systems and ease maintainability to allow downtime of the back office systems, Matrix allows a full de-couple using the financial data warehouse. This means zero down time towards online customers with a possible reduced scope of functionalities during back office downtime.

As part of the financial suite of Matrix, a full product hierarchy is provided to setup any type of financial instrument. This can be cash accounts, contracts, securities or even FX Swaps/outrights. The support for other assets are also included and within the hierarchy custom asset class builder enables the use of real estate, art, cars and any other type of assets which can be used as part of the customer portfolio. This is important when covering all different assets of complex structures of customers. Risk weighting and Tax classes are also fully supported within the product hierarchy.



Security Management

Matrix takes security up a level, thanks to the latest internal and external security technology developed as part of the Matrix solution. Single sign-on role based access and claim based secure token services come standard included in Matrix.

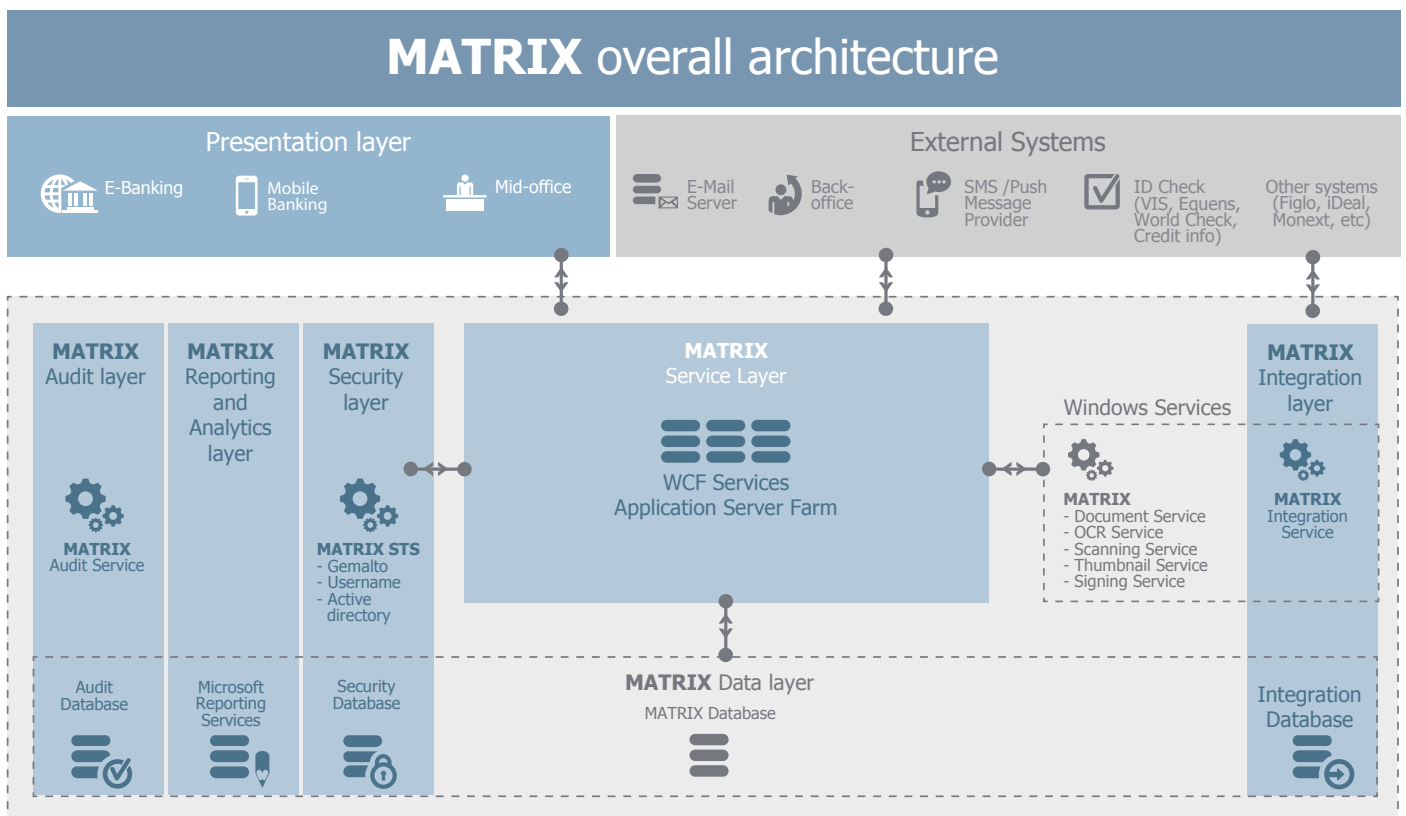
Supporting these functionalities, the system has an auditing feature and a very sophisticated security architecture. On service level the system uses state of the art claim based security through the use of a Security Token Service (STS) while on data level it uses role based security. Auditing is configurable and can be used to audit access to the system down to the lowest level of input parameters and results of every service rendered.

The system's data model supports an extensive set of customer attributes as well as a complete suite of industry standard products and their attributes: accounts, contracts, securities, insurances and custom assets.

Logical Architecture

At the heart of the system is the Matrix Service Layer. This module serves as the system's service bus meaning that all core functionalities are exposed as services and can easily be exposed to and used by internal modules as well as external systems. The system is modular and can easily be connected to external systems through the system's integration layer.

The figure below shows the overall architecture of the Matrix platform.



The system is composed of six layers which combined deliver a full modern mid-office. These layers and their individual purpose are:

- **Matrix Audit Layer:** this layer is responsible for auditing access to the system. The audit information is stored in the Matrix Data Layer, either in the central Matrix database or in a separate database for performance reasons.
- **Matrix Data Layer:** this layer is where all the data for the system resides. All data is stored in one database: the Matrix database.
- **Matrix Integration Layer:** this layer is responsible for integrating with external systems. Integration through the Matrix Integration Layer works on two levels: through replication of data between databases or through a service that can connect to web services, handle file transfers, message queuing, etc.
- **Matrix Presentation Layer:** the Matrix Presentation Layer has the user interface on top of the system. The user interface can be standard Matrix user interface such as the Matrix mid-office client or it can be a third party application or website.
- **Matrix Security Layer:** the security layer is responsible for authenticating and identifying users to the system. Out-of-the box, it supports the following authentication methods: username and password, Active Directory integration and PIN verification using Gemalto. The authentication and identification is external to the actual application and can easily be replaced by a third party Security Token Service, i.e. Microsoft's ADFS. The Security Layer is also responsible for authorization, limiting access to data and services based on user roles.
- **Matrix Service Layer:** the Matrix Service Layer is the hub of the system exposing data and core system functionalities from one central location. The Matrix Security Layer secures access to this layer.

Matrix eco-system

One of the most valuable advantages of the system is the easy adoption of loosely coupled (new) services or applications to the system. Over the lifetime of the system so far, many of those services have been engineered and are now also available for other existing clients and new prospects through either the Matrix partnership agreement or on a client specific basis. Within the future strategy of Matrix the following segment of systems are eligible for being part of the Matrix eco-System:

- Risk systems
- AML (Anti Money Laundering) systems
- PFM (Personal Financial Management) services
- Legal reporting systems
- Back office systems (Accounts, Securities, Insurances, Collateral, Claims, Loans)
- Security Authentication Systems
- Social Media Systems
- Government Controlled Supervisory Services
- Price feed Services
- Rating Services
- Brokerage Systems