

# Banking DWH model

PI Industry Standard Banking  
Data Warehouse Data Model



The design of the PI DWH model is the result of 20 years of practical experience

Telco  
**DWH**  
MODEL

Banking  
**DWH**  
MODEL

Common  
subjects

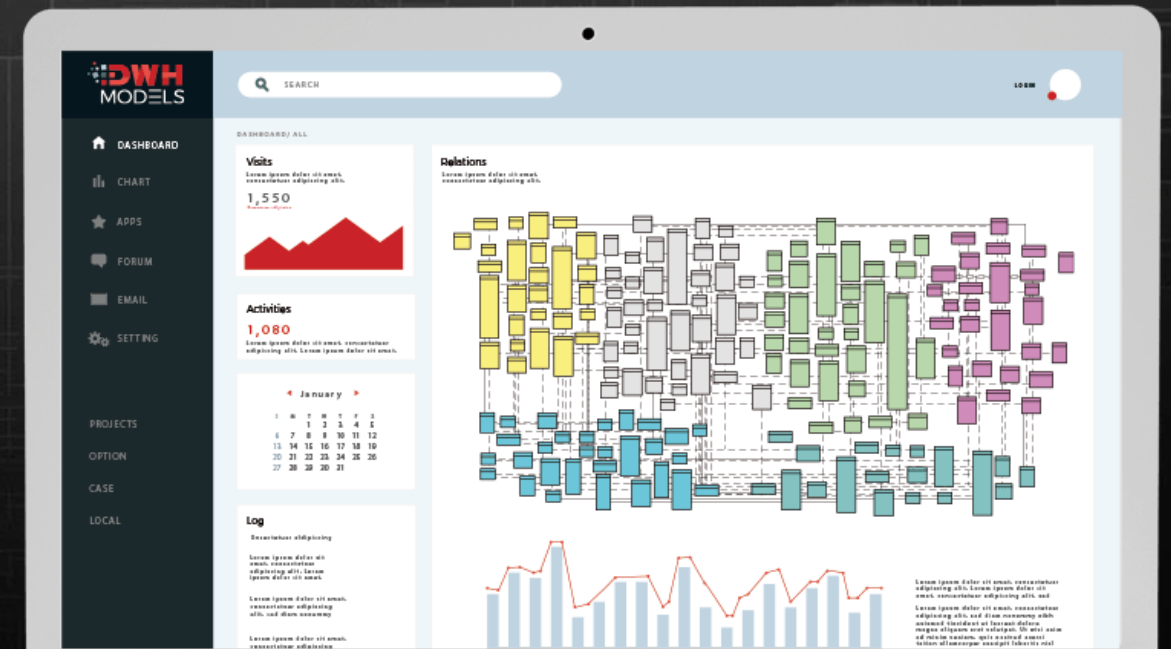
Insurance  
**DWH**  
MODEL

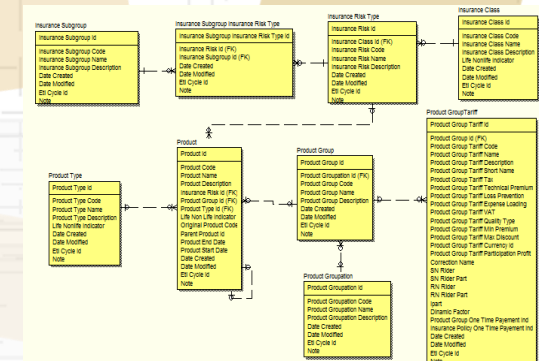
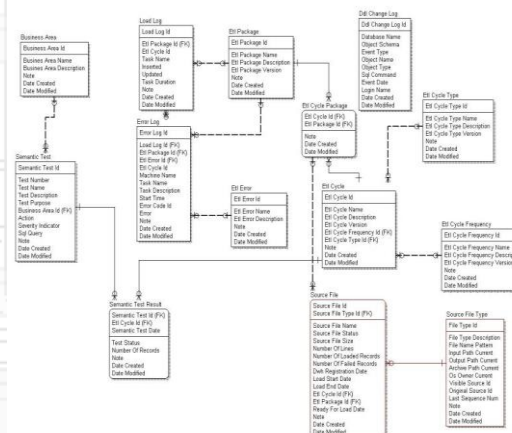
Retail  
**DWH**  
MODEL

Banking

DWH  
MODEL

# 1. PI Banking DWH model Business perspective







PI DWH Data Model is developed since 2010, on the basis of the experience in implementation in different financial institutions:



# Why customers love PI DWH models

„Licensing model”

„Modern DWH architecture”

„Easy to customize according to client’s needs”

„Reduce the time taken to scope business requirements”

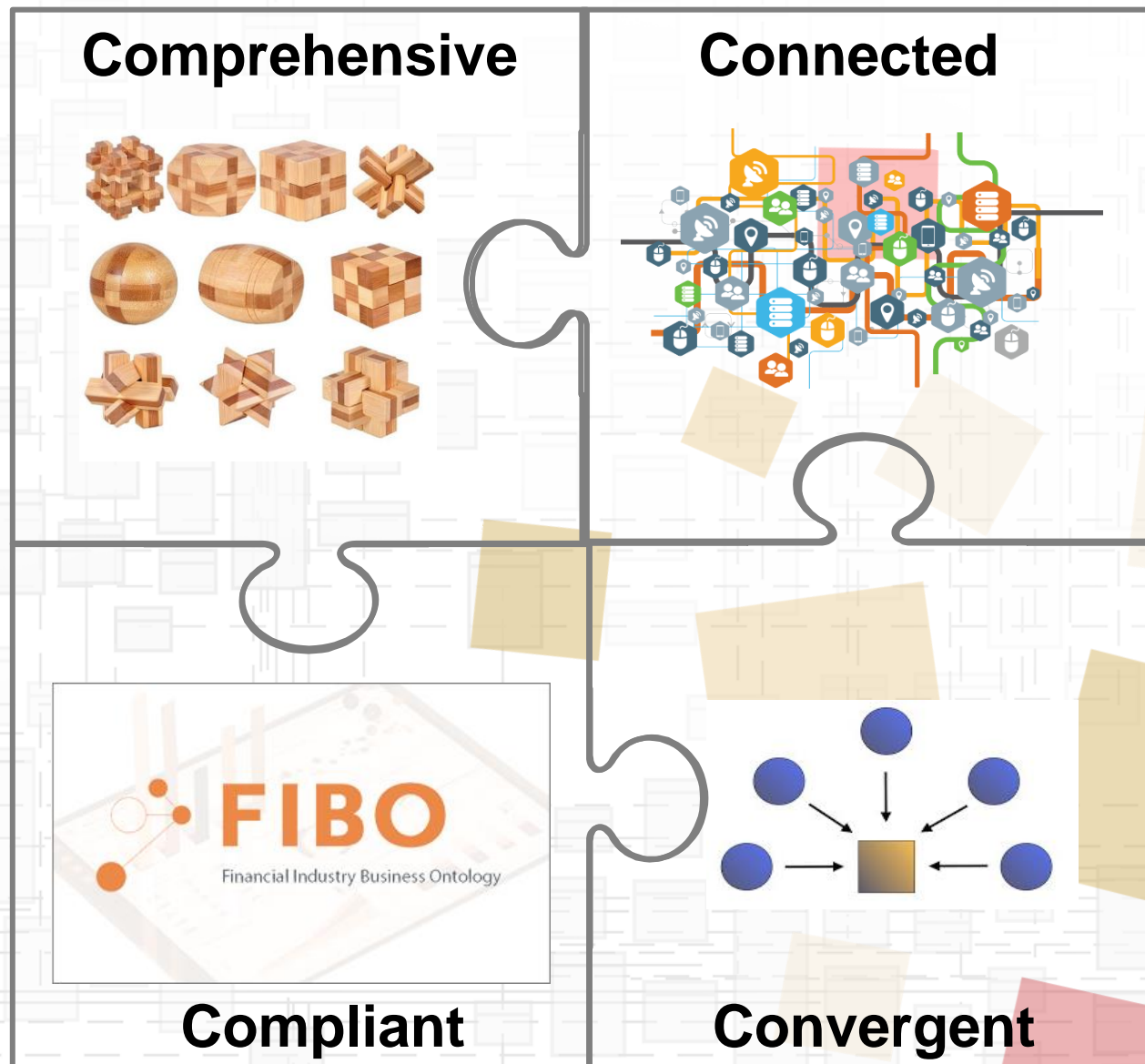
„Minimizes development costs”

„Fosters collaboration and approvals between business and IT”

„Reduces the risk of failure”

„Provides a solid basis for reporting”

# 4C approach



# PI Banking DWH Data Model

- Model based on practical field experience
- 509 Entities/Tables, 5.835 Attributes/Columns, 1.516 Keys, 1.489 Indexes
- Open to customizations
- Possibility to integrate data between bank and leasing company or bank and insurance company in one common data warehouse model enabling 360 customer view
- Work on the model is a continuous endeavor, in respect to:
  - Banking regulations
  - IFRS standards
  - New Analytical requirements
  - New markets
  - Data modelling standards





# Business Areas

**PI Banking Data Warehouse Model** consists of Subject **Business Areas** that form the basis of the banking business, thus forming the foundation for Data Marts

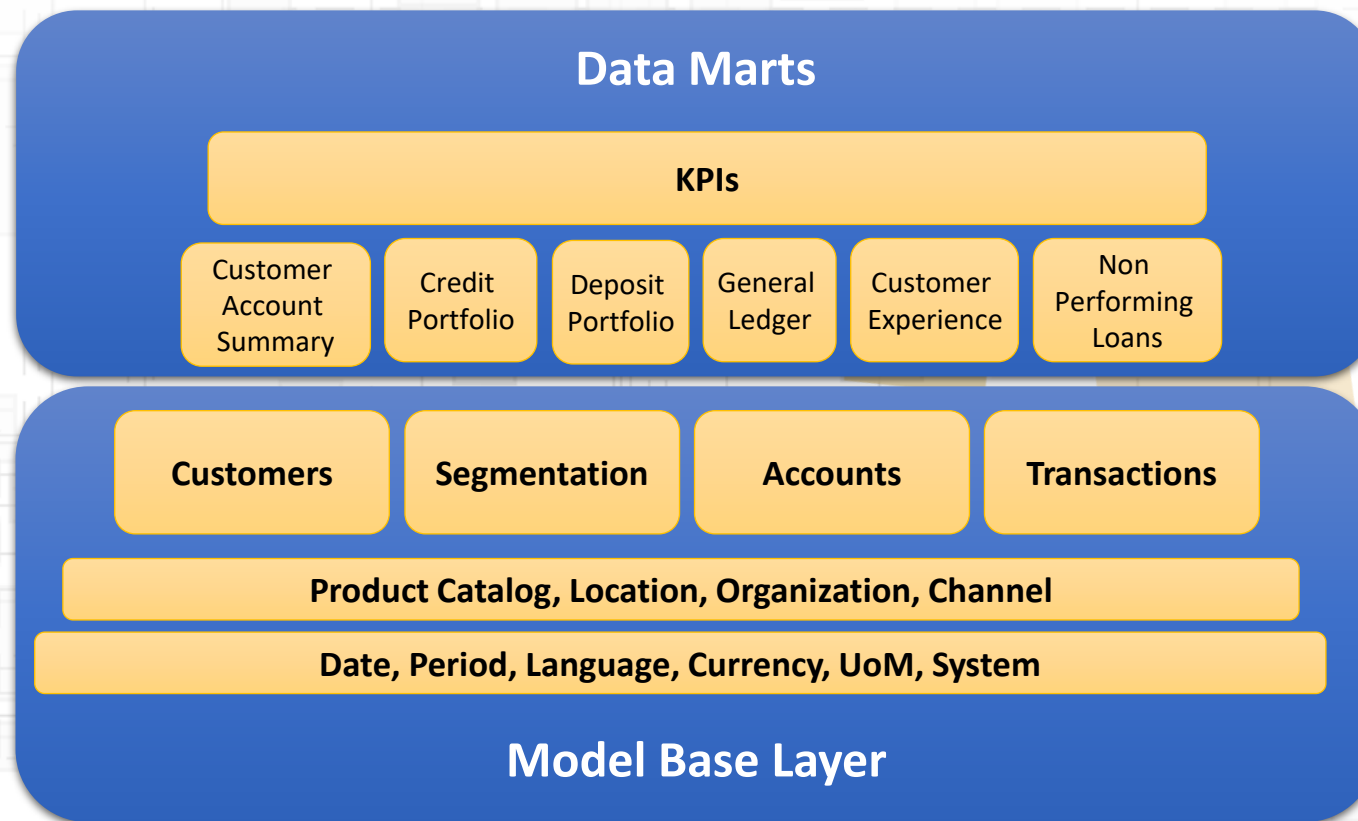
- General/Common
- CAPEX
- OPEX
- Credit Protection
- Party/Customer
- Customer Account
- Clasification
- General Ledger
- Human Resources
- Operational Risk
- BASEL III / IV
- Contact Center
- Loyalty Program
- Location
- Portfolio
- Product
- Rates
- Risk Type
- Sales
- Segmentation
- Transaction
- Resource Item
- Reporting
- Mobile Payments
- GDPR
- Customer Feedback

# Banking Data Marts

Predefined **structures for purposes of reporting and advanced analytics**, applicable for every bank, but also open for changes and additional customizations.

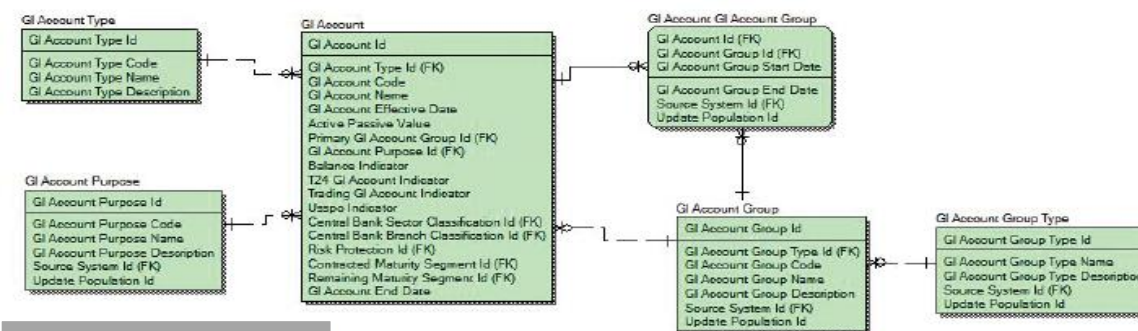
- Customer Account Summary
- Credit Portfolio
- Deposit Portfolio
- General Ledger
- Customer Experience
- NPL

# Business Areas – logical view



# Common Business Areas

- **General**
  - Date, Unit of Measure, Language, Currency, Channel...
- **Location**
  - Country, Region, Municipality, City..
- **Chart of Accounts**
  - GL Account Purpose, GL Account Type.
- **Product**
  - Product, Type, Group..
- **Rates**
  - Interest Rates, Fees...



# Party, Customer ...

- **Party**
  - Individual, Legal Entity, Org Unit.
- **Customer**
  - Type, Rating, Status..
- **Classifications**
  - Industry, Central bank classifications...





# Finance, HR, Sales, ...

- **HR** - Understand your workforce:
  - Demographic data, headcount analysis, workforce composition.
- **GL** - Chart of Accounts:
  - GL Account Purpose, GL Account Type...
- **Capex**
  - Fixed Asset.
- **Opex**
  - Cost Center, Cost Summary...
- **Sales**
  - Campaign, Channel, Lead...

# Accounts, Transactions, BASEL III, ...

- **Customer Accounts** - information on various accounts: customer, internal, subsidized, nostro - loro, deposits, loans. IFRS 9 ready.
- **Transactions** - describing transaction in a way who is a Payer, who is a Payee, what is the transaction purpose, credit/debit amount etc. Accounting activity defined by General Ledger.
- **Credit Protection** - Collateral, Credit Derivate, Guarantee..
- **BASEL III** - tracking liquidity risks and monitoring cash flows per timeband buckets

# Customer Experience, PSD2, ...

- **Customer Experience** - Transactional data coupled with the following subject areas, provides basis for modern banking customer-centric analytics:
  - Marketing Communications
  - Loyalty Program
  - Customer Feedback
- **PSD2 Ready** - Analyze mobile transactions and gain insights into data usage coming from AISP and PISP

# Different Data Marts ...

- **General Ledger** - snapshots based on GL postings:
  - General Ledger Balance, General Ledger Average Balance
- **Customer Account Summary** - snapshot information of all accounts:
  - Customer Account Balance, Customer Account Exposure
- **Deposit Portfolio** - snapshot of deposit accounts:
  - Initial Balance, Current Balance, Interest Amount, Average Balance
- **Credit Portfolio** - snapshot of credit accounts:
  - Initial Approved Amount, Disbursed Amount, Installment Amount, Days Past Due, Provision amounts

# KPI Definitions for reporting purposes

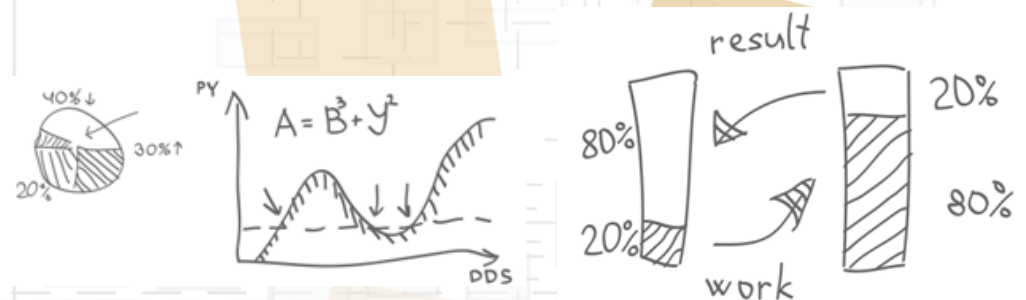
- 180+ Standard Banking KPI's and calculations are defined from model tables.
- KPIs describing reporting purposes for:
  - Customer account
    - Account and loan volumetrics.
  - Credit risk
    - Exposure, NPL ratio..
  - Profit and loss
    - Income, expenses, tax..
  - Sales
    - Loan aproval rate, application volumes.





# Implementation methodology

- Initial 2-3 weeks of workshops to define overall requirements and to establish expectations and timelines.
- Model customization and source-to-target mappings are done based on functional groups defined during first workshops.
- General and Party is always the first functional group in the line of customizations, because of dependencies with practically all the entities.
- Order of other functional groups is determined with Client by priority.
- For each of those functional groups customization and mappings may require 4-8 weeks, depending on complexity.



Banking

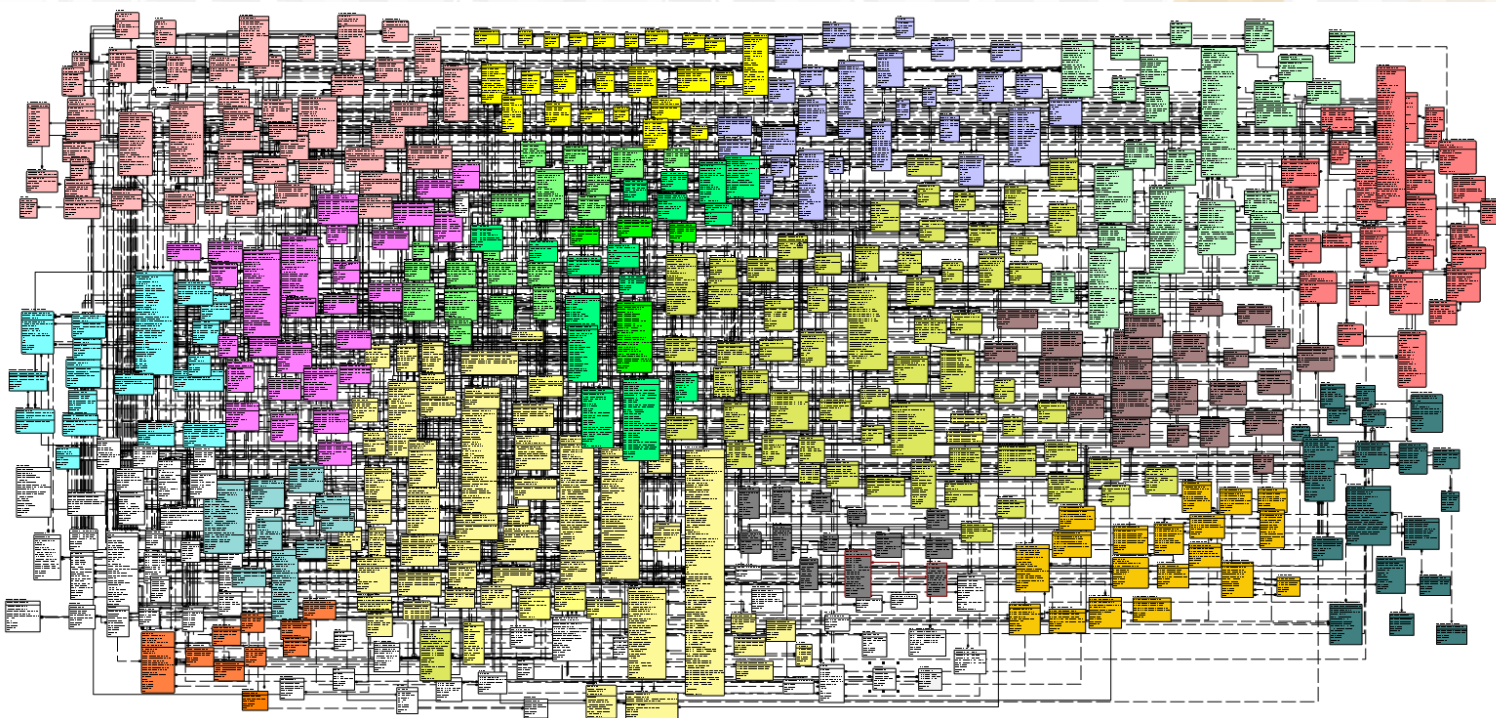
DWH  
MODEL

## 2. PI Banking DWH Model® Technical Perspective



# DWH Data Model – technical perspective

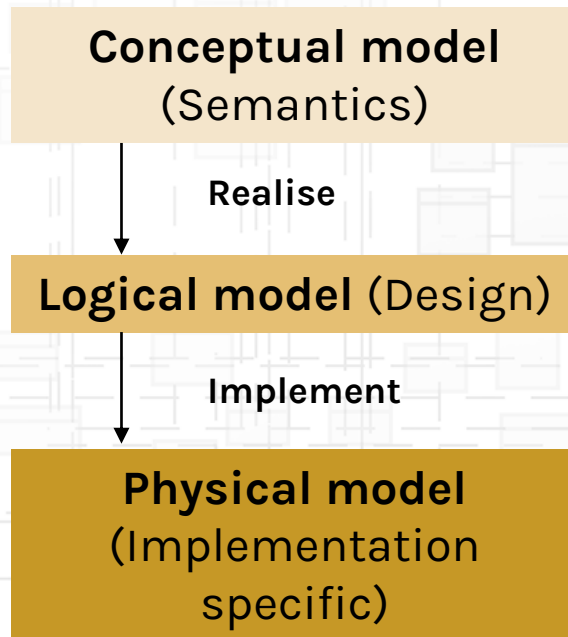
- More than 500 entities (tables) in core DWH model
- Possibility to create number of datamarts based on the currently existing entities



# DWH Data Model – technical perspective

- Created in Erwin (Erwin license not included in price but available through PI)
- Descriptions of attributes / entities, with examples (possible values), where applicable
- Database independent - possibility to create DB schema on any of the standard RDBMS (Greenplum, Netezza, Vevrtica, MS SQL Server, Oracle, DB2, Teradata, Sybase IQ...)

# From Conceptual to physical model



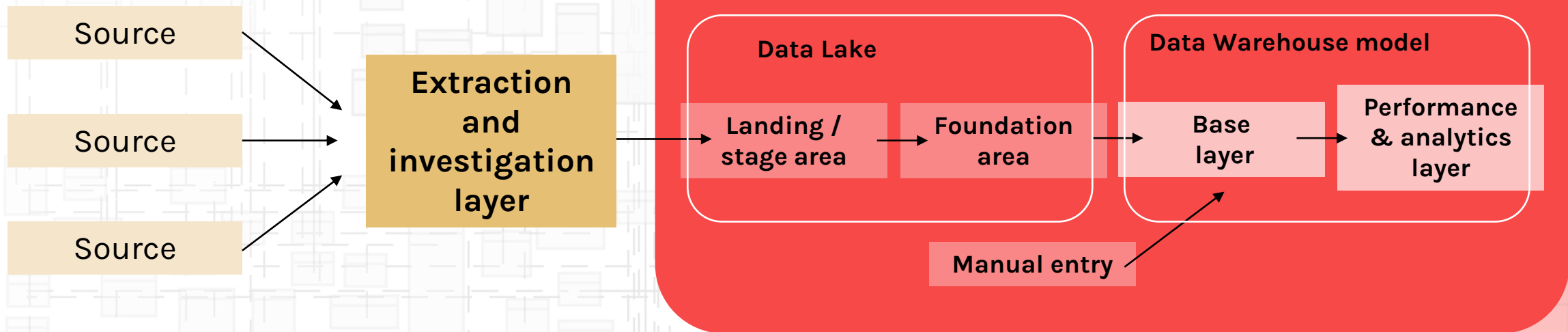
FIBO model

Pi Banking DWH Model

Customer implementation



# Where our model fits in analytical architecture?

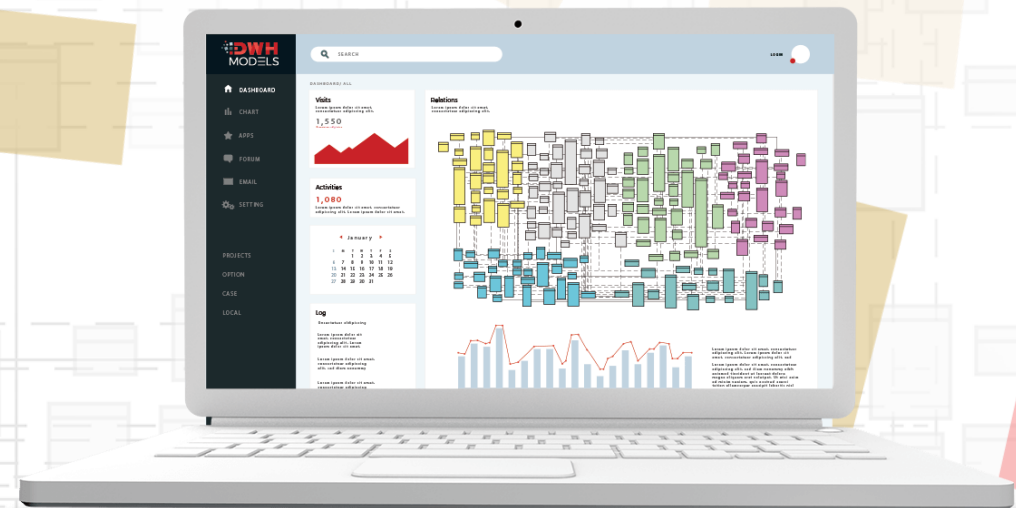


# Modeling principles

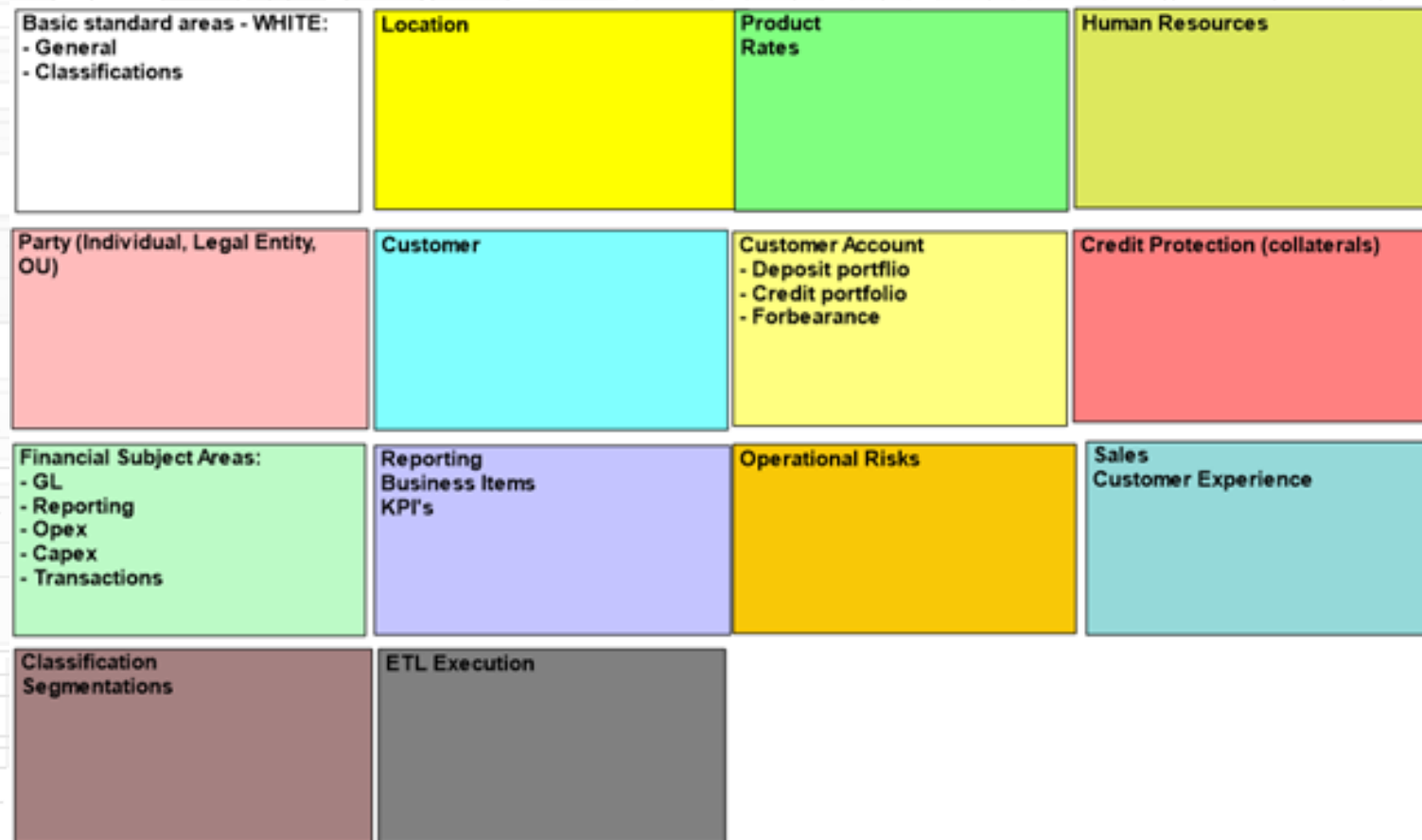
- Standardization of data types (usage of domains)
- Standardization in naming (ID, Source ID, Name, Desc)
- SCD (Slowly Changing Dimension) handling:
  - Hybrid SCD (Type VI) modeling approach
  - Depending on the data volume one historical table or each changing attribute has it's own table

# Model Roadmap

- **Major release (X.0) available every 2 years**
  - New Subject Areas and related supported analytics and KPI's
  - Everything included in Minor releases
- **Minor release (3.X) available 3 times a year**
  - New Tables in existing Subject Areas
  - New attributes in Existing tables
  - Other minor enhancements



# Colors used in the model



# KPI's and reports

- 100+ Standard Banking KPI's and calculations are defined from model tables
- Standard analytical models and set of 20+ reports and 5+ dashboards developed in Tableau (priced additionally – report and Dashboard mockups included in price)

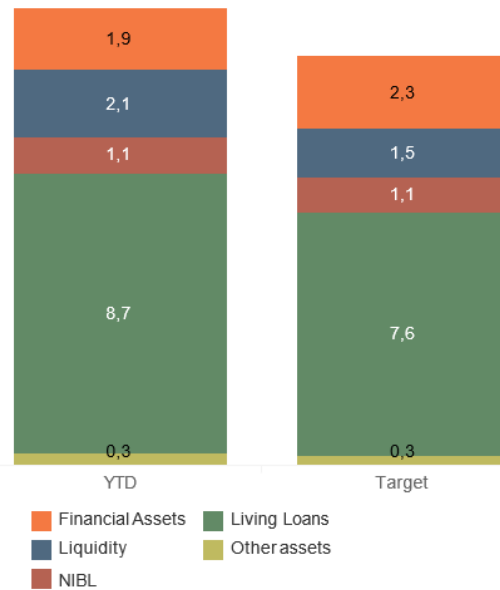


# Dashboard samples - finance

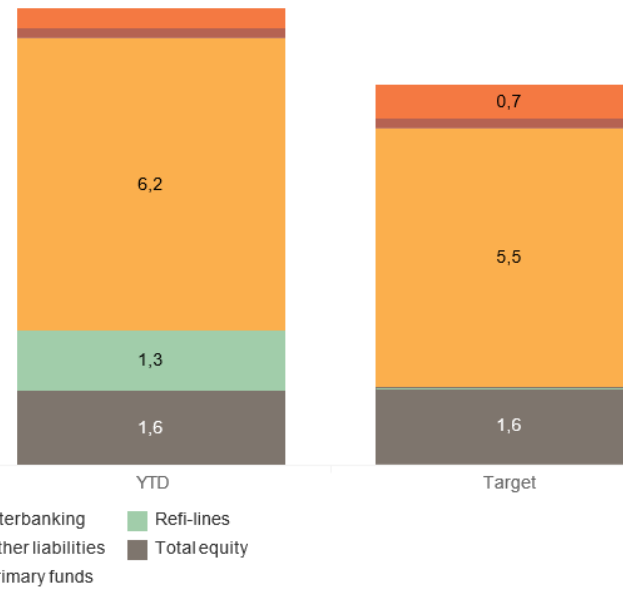
## KEY FINANCIALS

### Balance sheet

#### Assets (incl. Risk Provisions)



#### Liabilities

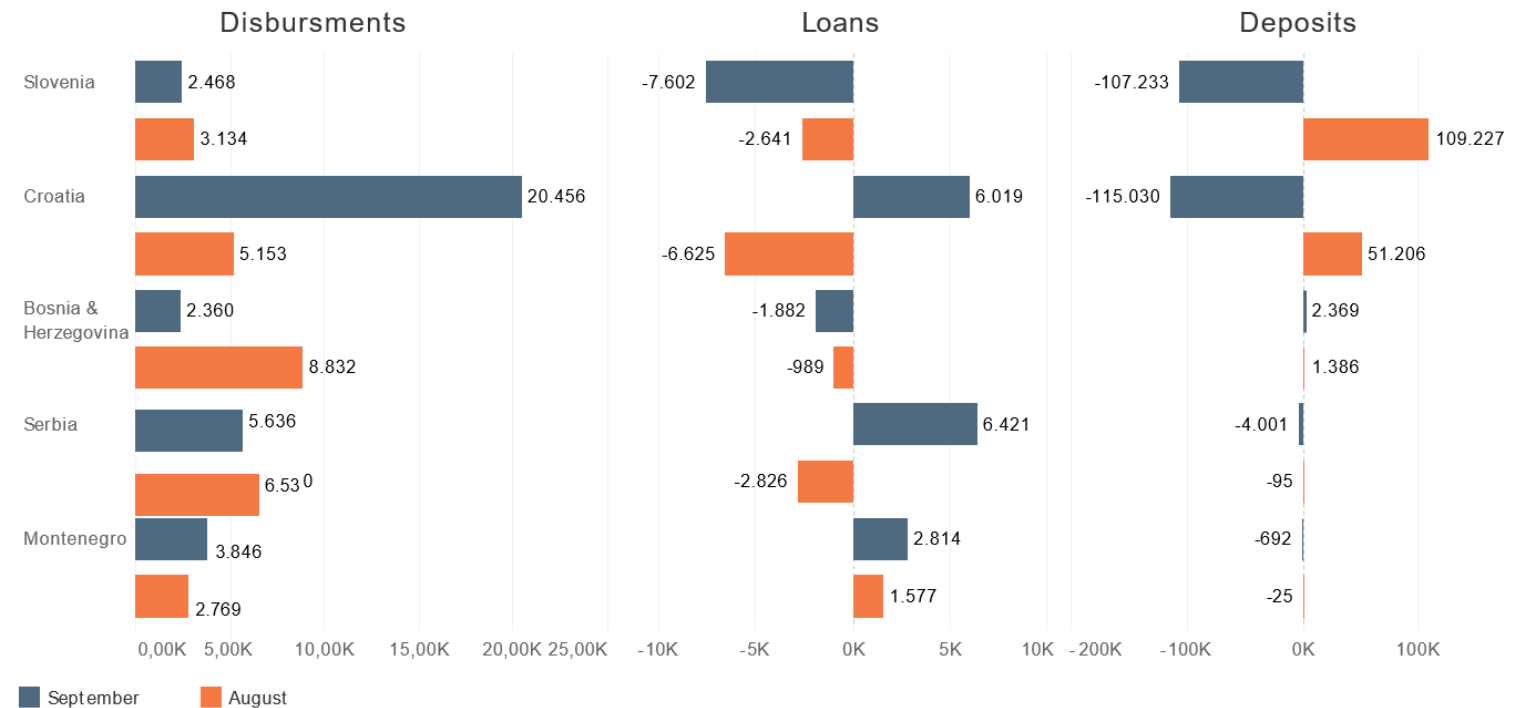


Interest rate living loans	↓	-0,05%
Interest rate deposits	↓	-0,01%
Net interest margin	↑	0,08%
Cost / income ratio	↑	3,89%
NPL Coverageratio	↑	0,39%
Return on equity	↓	-2,23%

# Dashboard samples - sales

## SALES – Market development

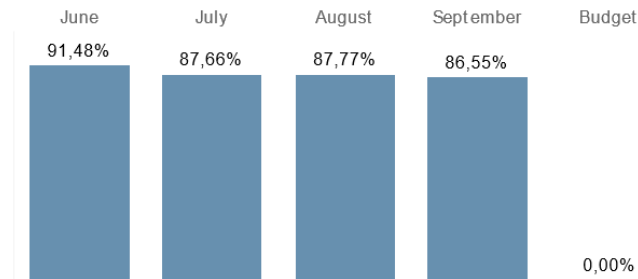
Business Segment  
Large Business



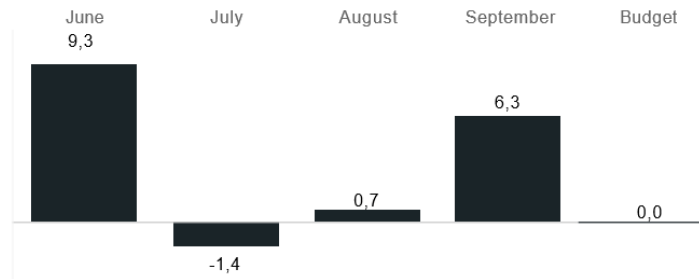
# Dashboard samples - risk

## RISK – Overview

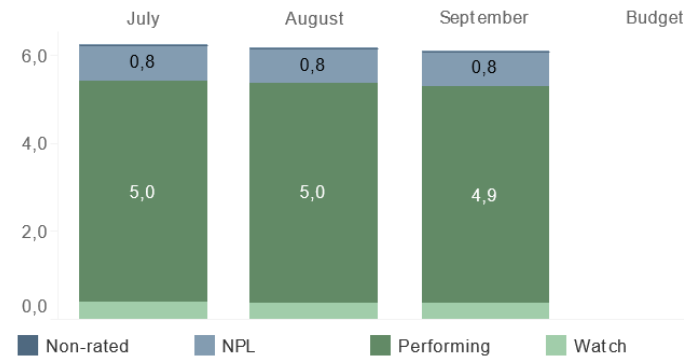
Risk bearing capacity utilization ( % )



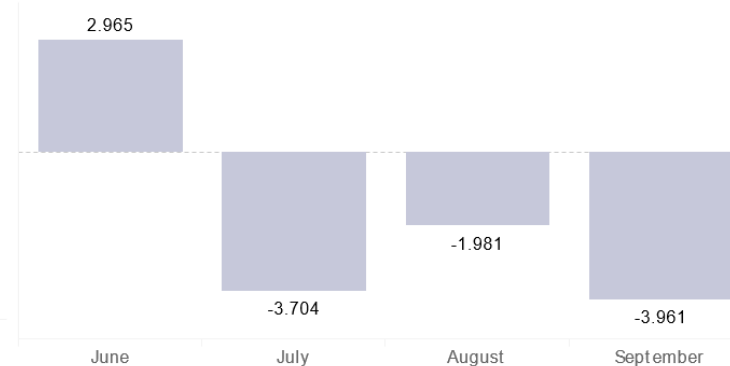
P/L effect of risk provisions monthly (EUR M)



Overview by asset quality



Credit risk shortfall



# PI DWH Banking Model vs. other models

- Less expensive than competitive models due to pricing policy not based on HW sizing
- Less complex and less logical than competitive models
- More open to customization than competitive models
- Model Architect prices lower than for competitive models
- Open for implementation partners (with Reseller contract)

# Model Pricing

- Based on range of Active Customer Accounts
  - Less than 1 million
  - 1-2 million
  - 2-5 million
  - 5-10 million
  - 10-20 million
  - 20+ million
  - Unlimited at group level – subject to negotioation

20% annual M&S fee include delivery of new versions of the model

# Model packaging

- Model in ERwin format and exported to other required formats
- Detailed Subject Areas Documentation (~50 pages)
- Detailed ERwin Model Report Documentation (~400 pages)
- Business Glossary with 150+ definitions
- KPI list with 180+ standard banking KPI definitions
- Customization Guide Documentation
- Source to Target Mapping templates
- Detailed Model content and Methodology Powerpoint Presentation (300+ Slides)



# About Poslovna inteligencija

- Leading Data Management implementer in SEE region
- 20 years of field experience in business analytics, in all industries and the public sector
- 300+ delivered projects in 25 countries
- 120+ consultants, 5 project managers
- The highest level of partnership with world's leading BA vendors



Informatica



Gold Data Analytics  
Gold Data Platform

VERTICA

cloudera

erwin

databricks

# PI solution areas

## Strategic ICT consulting



**Analysis, design, development, implementation,  
support and education**

# Banking DWH MODEL



## Telco DWH Model

**Improve your decision-making process** based on quality data using advanced analytics and be a part of digital transformation. **Extract consumer insights** to learn more about their preferences and reinvent the customer experience.



## Insurance DWH Model

Make informed and data-driven decisions and **transform information into meaningful actions**. Turbulent times of saturated markets and new regulations, highlight the importance of the **availability of the right information at the right time** for the (re)insurance industry.



## Retail DWH Model

**Retail DWH model**® is standard industry data warehouse model applicable for retailers and wholesalers, covering traditional Business Intelligence requirements, regulatory requirements and Big Data Analytics requirements.