Why, When and How?
The Importance of Business Intelligence
09.11.2022
Agenda

WHAT IS BUSINESS INTELLIGENCE?  BI PRINCIPLES  DATA WAREHOUSING
We live in a Data Driven Society

- We expect data to be available
- We are willing to give data in order to get services or more data
- We expect companies to use data intelligently/legally
- We make decisions based on data
- We expect others to make decisions based on data

“In God we trust. All others must bring data.” — W. Edwards Deming
Where does Business Intelligence come into the picture?

- **Business intelligence (BI)** is an umbrella term that includes the applications, infrastructure and tools, and best practices that enable access to and analysis of data to improve and optimize decisions and performance.

- **BI in Swedbank** is driven by **Group Business Intelligence (GBI)**
  - Our purpose is to lead in providing analytics and trusted data to achieve Swedbank’s Strategic direction.
Examples of capabilities enabled by BI

- **Run the business**
  - Customer Management
    - Smarter/Targeted offers, automated offering
    - Refocusing bank channels
    - Customer segmentation
  - Controlling & Steering
    - Profitability of products,
    - Input for strategy
  - Risk management (both Credit and Market Risk)
    - Better understanding of what risks to take in which customer segments

- **Regulatory requirements**
  - FINREP
  - Credit Risk (IRB)
    - License for Internal Ratings Based approach
  - AFC/KYC
To reiterate our goal

• We to gather the necessary data from our organization
• In strong collaboration with business units and downstream users
• In order to turn it into knowledge and wisdom, used to act in the best way for the company
BI Principles

- **Business driven**
  BI development is driven by business functional requirements.

- **BI Alignment**
  Business initiatives BI alignment prevents delays, bottlenecks, budget overdraft, low data quality, and helps to manage dependencies.

- **BI Competence Center**
  BI Platform with standardized processes and skilled people enable efficient development and quick capacity ramp-up and ramp-down.

- **Re-usability**
  New BI solution can be built on existing solutions, where data is available in a consistent manner.

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**Data Delivery BI Services**

**Source data BI services**

**Enterprise Information BI Services**

**Business decision making**

**BI eco-system has high dependency & complexity**

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BI Reference Architecture

**Acquisition & Data integration**
- ETL, ESB, WEB services, message bus, data federation, loading scripts
- Change Data Capture
- Event Streaming
  - Batch
  - Real-time

**Data Storage & Processing**
- Data Lake
- Data Warehouse(s)

**BI Capabilities and Tools**
- Information Portal
- Analytics Workbench
- Data Science

**General Ledger**

**Operational Source Systems**

**MDM**

**External sources, 3rd Party feeds & APIs**

**Other Internal Sources** (web and mobile activities, unstructured data etc)

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**Information Management**
- Profiling
- Data Quality
- Matching
- Test Data Mgmt.
- Auditing
- Data Integration

**BI Metadata Management**
- Service Glossary
- Data Models
- Data Lineage
- Metric calculation rules

**BI Information Security Services**
- Format preserving Encryption
- Anonymization
- Privacy (GDPR)

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Why BI – Technical view

- Automation of the process – time, quality, transparency
- Collect data – multiple sources, different technology
- Manipulate data – huge amount of data, process orchestration
- Data discovery – analytical tools
- Provide data out – multiple consumers, reporting tools, non-IT consumers
- Providing BI service – knowledge of system
- Do once – use many
BI Data Lake and Data Warehouse

- Raw unstructured data vs structured
- Prepare and control provided data VS source representation of data
- “Central version of the truth”
- Storage – expensive vs lower-cost
- Data science and analysis VS Business Reporting and Analysis
What is Data Warehouse

- Data is integrated and consolidated – modelled into subject areas as Party, Product, Agreement etc.
- Data is described
- Data is validated
- Data is historized – even if source system might not store history (business view on history)
- Data is prepared for consumption – common access, specific access, data out batches, data marts and denormalization etc.
Subject areas – Financial Services Data Model

**PARTY**
An individual or group of individuals.

**ASSET**
Items that belong to parties and which have value.

**FINANCE**
The internal accounting of the business.

**LOCATION**
A geographic or spatial area, physical address or electronic address.

**CAMPAIGN**
A communication plan directed at parties or a market for a purpose.

**AGREEMENT**
A contract or deal between parties that is of interest.

**EVENT**
Financial or non-financial event which may involve contact with the customer.

**INTERNAL ORGANIZATION**
A unit of business within the financial institution or insurance company. Is a type of Party.

**PRODUCT**
Any marketable or tradable product or service including terms and conditions.

**CHANNEL**
The vehicle by which a customer interacts with the Financial institution/insurance company.
Data Warehouse structure

- Selected based on tool(s)
- Selected based on technical usage – store, manipulate data
- Selected based on business usage – understand data
- Combination of structures
Structure (3rd normal form vs denormalized)
Data sourcing and manipulation

- Extract-Load-Transform (ETL-ELT) tools.
- Run internal and external calculation engines
- Pre-calculate data – Metrics, Data marts, Reports
- Redistribute calculated Metrics/Data to other services
- Schedule processes to run as soon as input data is ready
- Data quality and lineage - Validate results and trace back error
Data provisioning – fit for purpose

- Non-IT users – Reports (excel, dashboards, etc.)
- Non-IT advanced users – Tools providing business semantics access layer to data.
- Reporters / modelers – Prepared data sets, data marts
- Advanced users – ad hoc reporting on Data Warehouse data via “thin access layer”
- Reporting tools – “thin access layer”
- Operational access – tactical access (small, fast, well performing)
- Batch access – specific layer (views + marts)
- Prepared data set (file) – ETL prepared data
The end

Thank you for your attention!