# Advanced data security in Power BI

A step further than just rls

Power BI & Fabric SUMMIT 2024

Special thanks to Fabric and Power BI Team at

Microsoft

This Summit presented to you by

RADACAD

# Hylke Peek

## Data Consultant

peek data

I'm working on a lot of different stuff. Focus on **Azure** and **Power BI**.

- Data Platform
- Datawarehousing
- Analytics
- Azure data solutions
- Power BI

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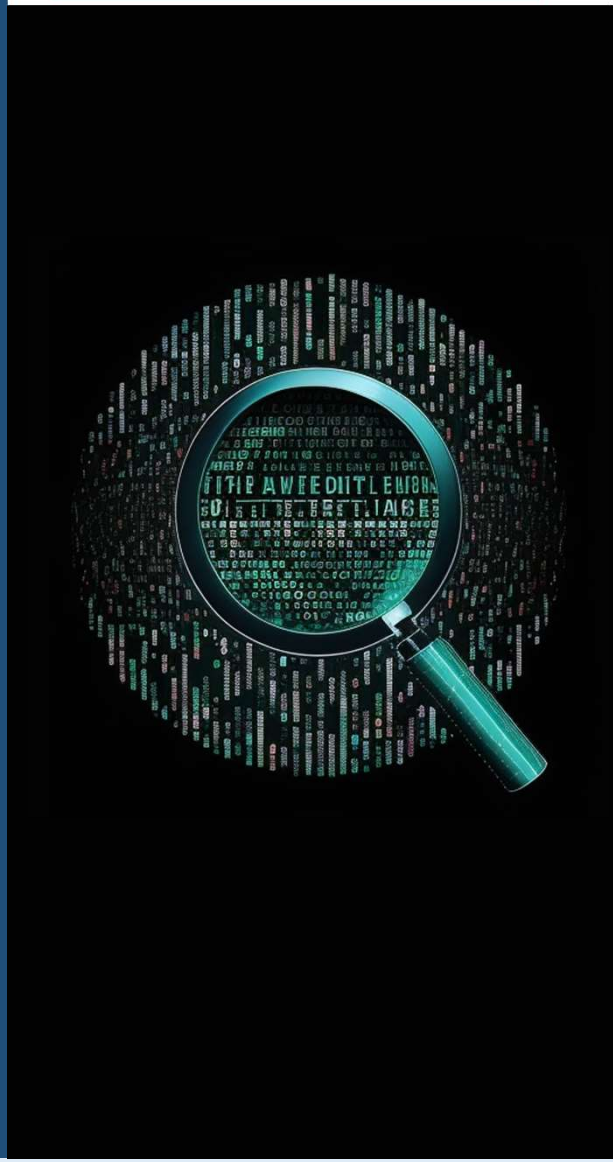
# Topics

The complexity of data security

The implementation

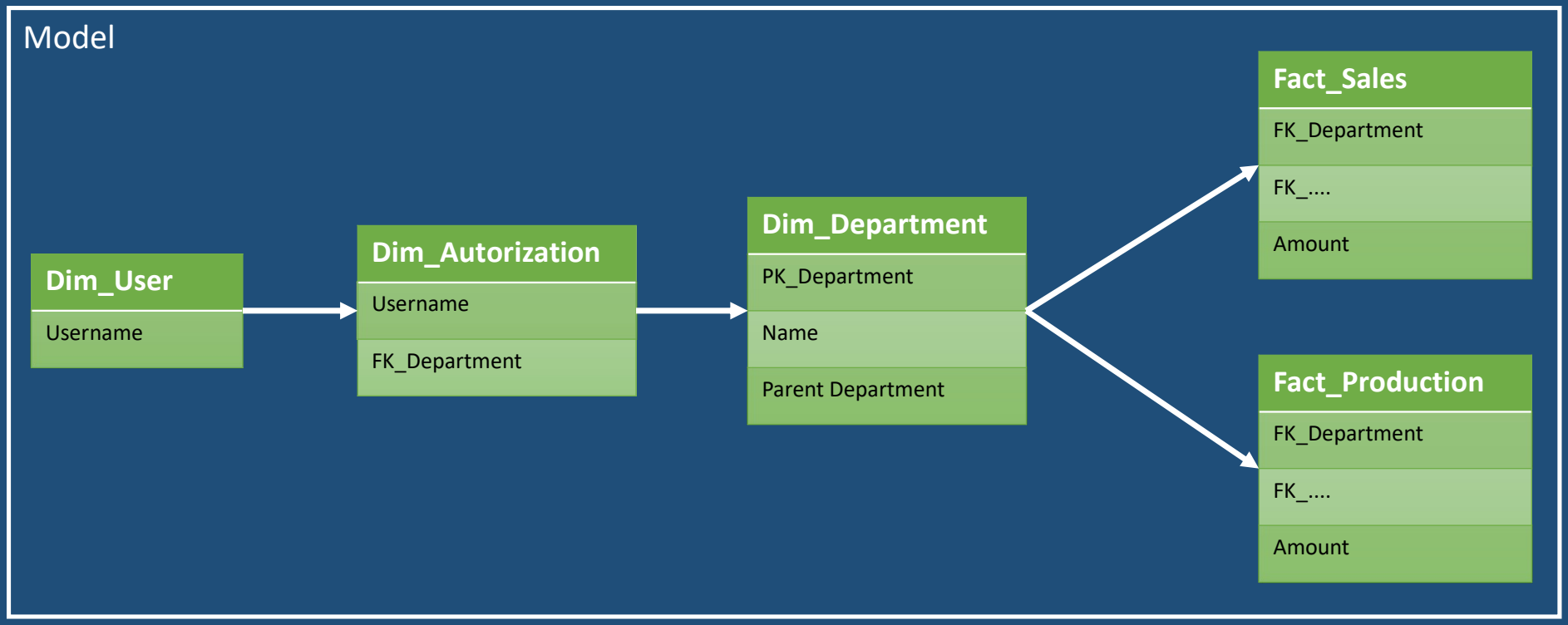
Takeaways



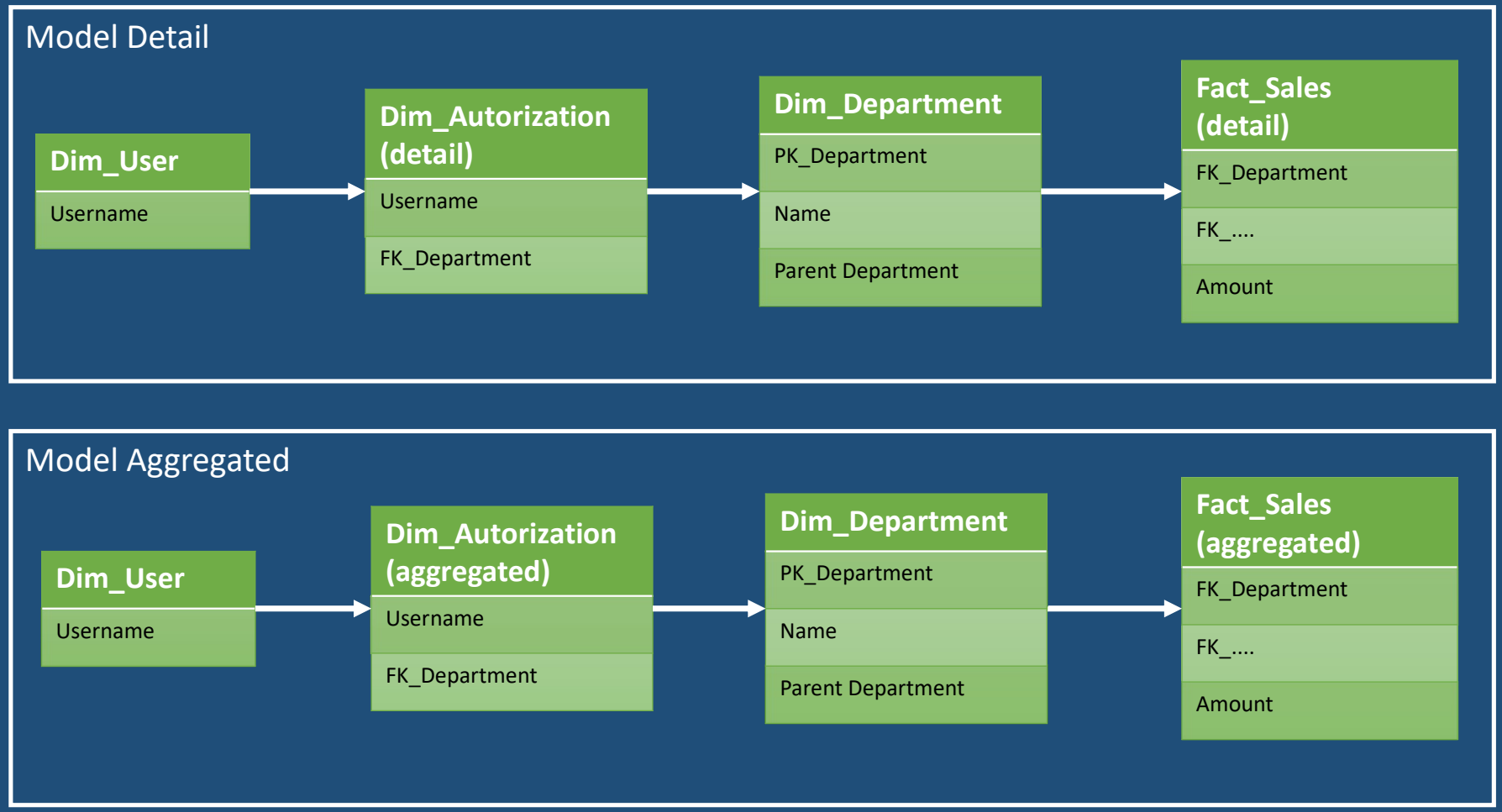


# The complexity of data security

# Scenario 1: Based on organization hierarchy



# Scenario 2: Detail vs. Aggregation



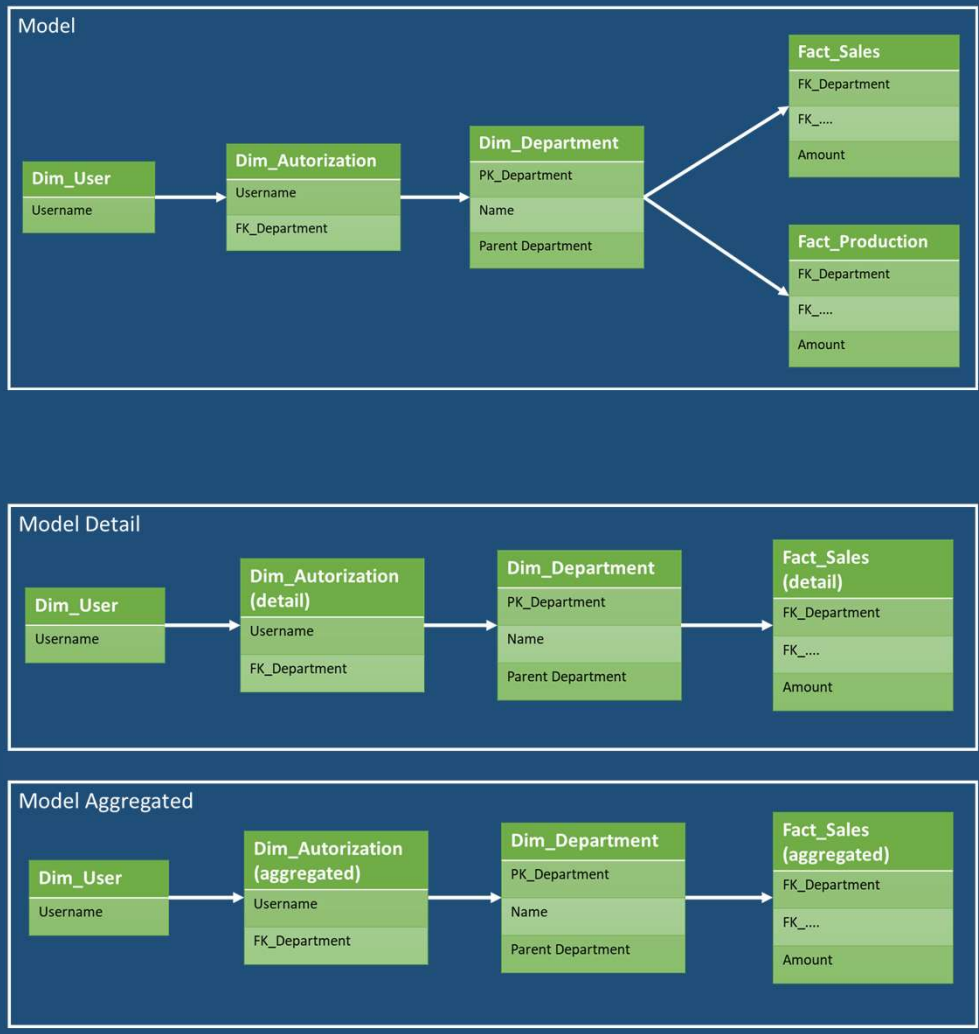
# But what about…

Differences between domains?

Differences between roles?

Object Level Security

Without getting lost….



# Example use case

Managers are allowed to see all data from **THEIR** departments.

e.g absenteeism per employee

Managers are allowed to see aggregated data from **OTHER** departments.

e.g absenteeism on department level

Managers are allowed to see date of birth from employees within **THEIR** departments **ONLY**.

e.g John is born on 03-05-1947

Managers are allowed to see aggregated client related data from **ALL** departments.

e.g Health care costs for your department are 4m.

Managers are **NOT** allowed to see detailed client data within **ANY** department.

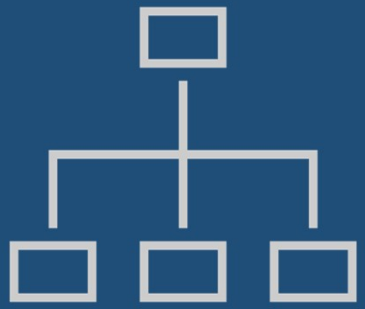
e.g Health care costs for Will are 500,-

Same for finance.

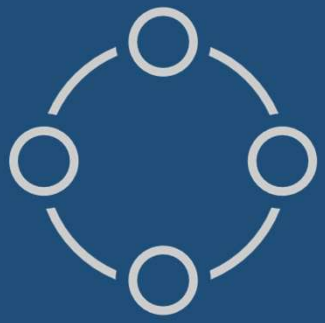
Care personnel are not allowed to see employee data but are allowed to client data in detail.

# Aspects to data security

Organizational hierarchy

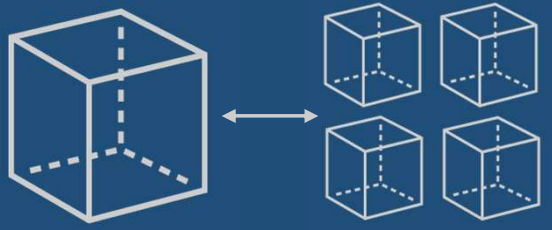


Domain

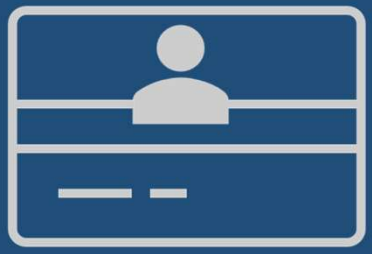


Roles

Granularity



PII data



# Setting up data security

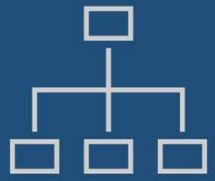
- Business – Clear understanding of this ‘business logic’
- Source(s) – Organizational hierarchy and responsibilities
- Microsoft Entra (AAD) – Security groups and group assignments
- Data platform – Translate business logic to autorization definition
- Data platform – Integrate autorization into your data model
- Power BI – Configure data security, setup relationships and add/adjust measures

# The implementation

# Takeaways

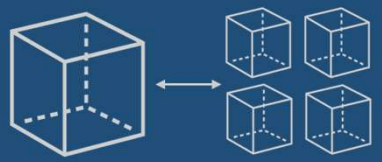
# What makes it more complex?

Organizational hierarchy



Basic data security using RLS.

Granularity



1 autorization table is not enough because of different permissions on different granularity. Need changes to the data model.

Domain

Permission differs between domains so, we need separate autorization tables for each domain. Need changes to the data model.

Roles

The business logic behind the costcenters you're allowed to see differs between roles. Configure Entra and add logic for defining autorization.

PII data

OLS can be used with RLS but with limitations. You can't use 'conditional OLS'. Configure Power BI.

# Takeaways

It’s a team effort. Involve the business asap to have a clear understanding of their needs.

Define your scenario. Which aspects (Organizational hierarchy, granularity, domains, roles, PII data) are relevant and which are not?

When and how to configure each component (Entra, database, RLS, OLS, audiences) according to your scenario.

Create a dynamic solution where you can add new groups

Conditional PII for more complex scenario’s, limit build permissions or add PII data to fact tables.

# Thank you

- Connect to me at: @hylkepeek

  Linkedin.com/hylkepeek

- Stay online for my live Q&A sessions