



Human Values and the Business Intervention Model

DecisionCAMP 2023

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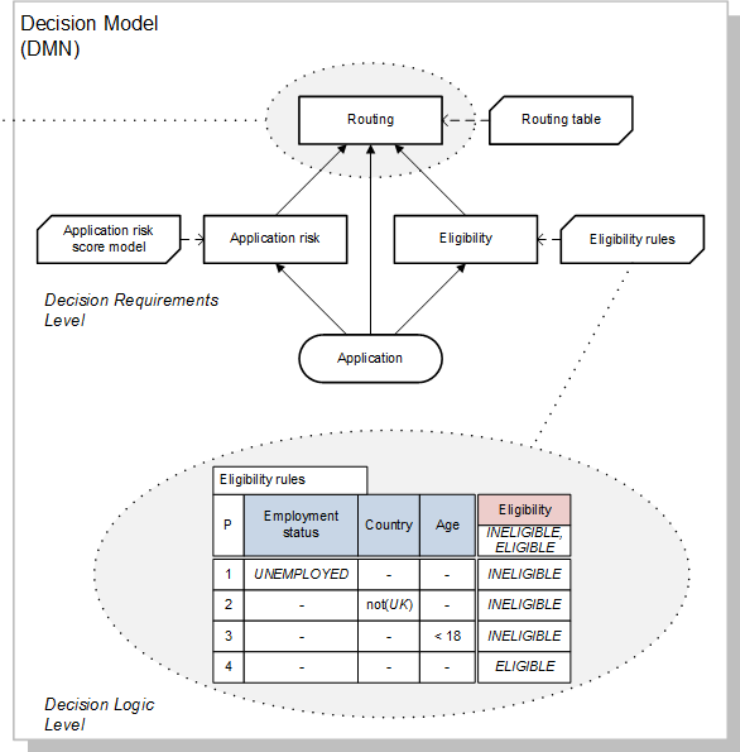
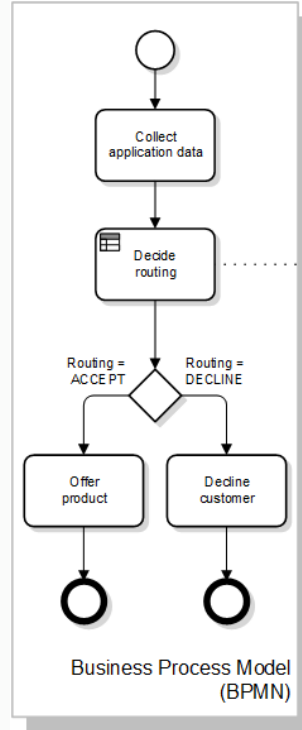
Senior Director, Business Enablement, FICO



Modelling Business Behaviour

Use case composition

- BPM+ provides three levels of modelling:
 - BPMN & CMMN for decision orchestration (processes / cases)
 - DMN for decision structure (DRD)
 - BKM to hold decision functionals (detailed logic / ML models)
- Models composed into a hierarchy: a [Use Case Composition](#)
- Defines business decision making as executable models of desired business [behaviour](#)



What's missing?

- Successful at capturing “what” and “how” of decision-making
 - Separation of concerns between levels simplifies models in each layer
 - Composable, executable, business-friendly
 - Simple integration with ML models as contents of BKM
 - Provides transparency and explainability of decision-making
- Still does not capture the “why”: the **business motivation**
 - Decisions are agnostic as to outcomes
 - KPIs do not express value and are not part of model
- Need a mechanism for embedding **human values**
 - Business goals
 - Environmental, Societal & Governance goals



Objectives

- Embed [human values](#) in compositions
- [Close the loop](#) on decisions
- Support users with [proposed improvements](#)
- Provide [transparency](#) and [explanation](#) of motivation
- Make [accessible](#) to business users
- Make [shareable](#) as assets



Existing Motivation Models

- For the purpose of attaching human values to use case compositions...
 - **OMG BMM:**
 - Too abstract
 - Based on Business Rules Approach
 - **BA Guild BAM, OMG BACM, ArchiMate:**
 - Too complex
 - Address business architecture rather than behaviour
- So focussing on the specific concepts required...

OMG BMM
Business
Motivation Model
v1.3 2015

BA Guild BAM
Business
Architecture
Model
V2.0 2022

OMG BACM
Business
Architecture
Core Model
V1.0 2022

Open Group
ArchiMate
V3.2 2022



The Business Intervention Model

Precepts



Changes to models are business interventions

Models represent and implement business behaviour, so changes to a model are business interventions, not just code changes



Successive interventions provide improvement

Business users implement successive incremental interventions to achieve their business goals



Each intervention has an explicit target

The business user has a specific business performance target in mind for every intervention



Targets are defined using metrics

Business performance is measured using metrics (KPIs), and targets are defined against those performance metrics



Performance is monitored against targets

The performance of the modelled system may be monitored and checked against the performance metrics

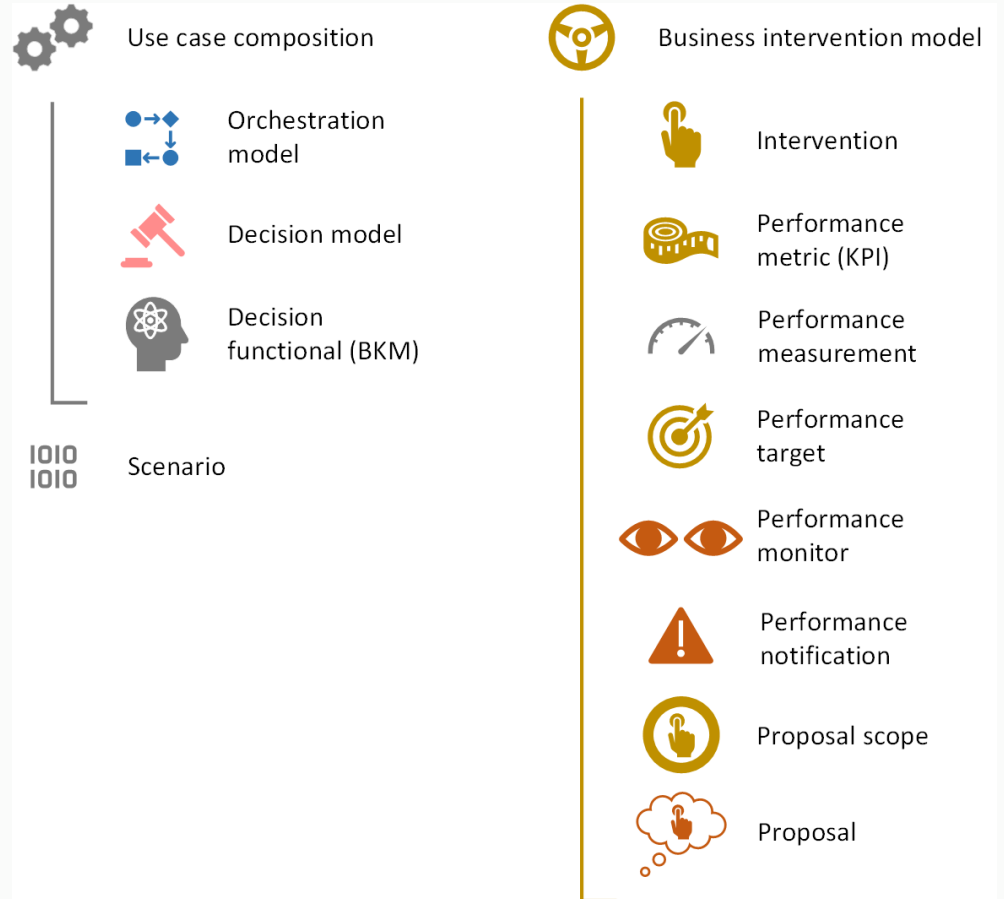


Feedback closes the loop

The results of monitoring allow evaluation of previous interventions and consideration of further interventions

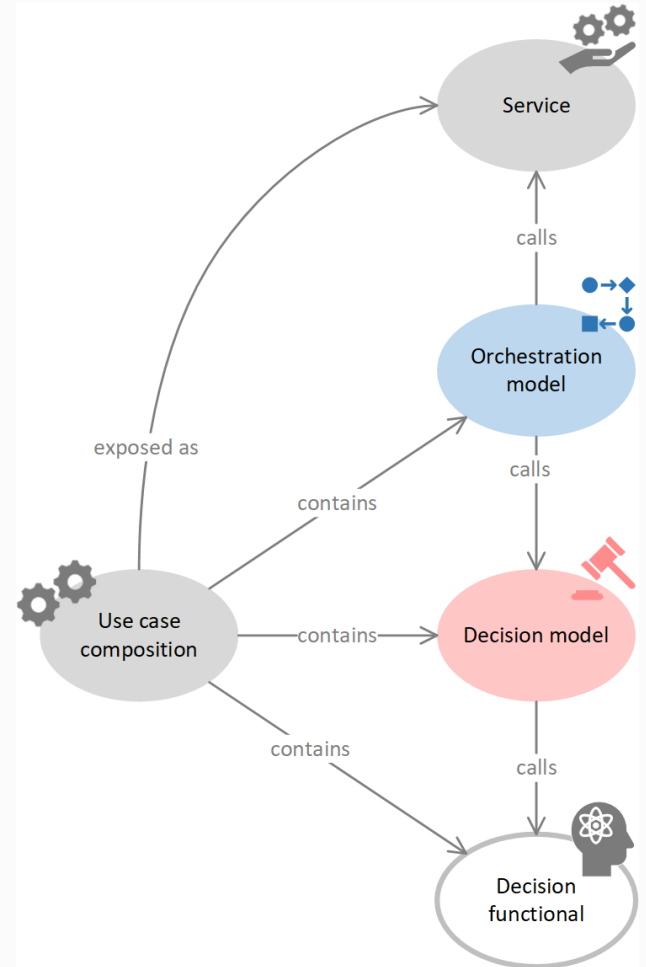
Concepts

- First task: select the concepts to be reified in the model
- Concept model provides the classes and principal relationships of an ontology
- Ontology forms basis for conceptual design of UX



Use case composition

- Contains a hierarchy of linked models
 - **Orchestration models** (e.g. process, case)
 - **Decision models** (DRDs)
 - **Decision functionals** (contents of BKMs)
- May be exposed as a Service called by other compositions



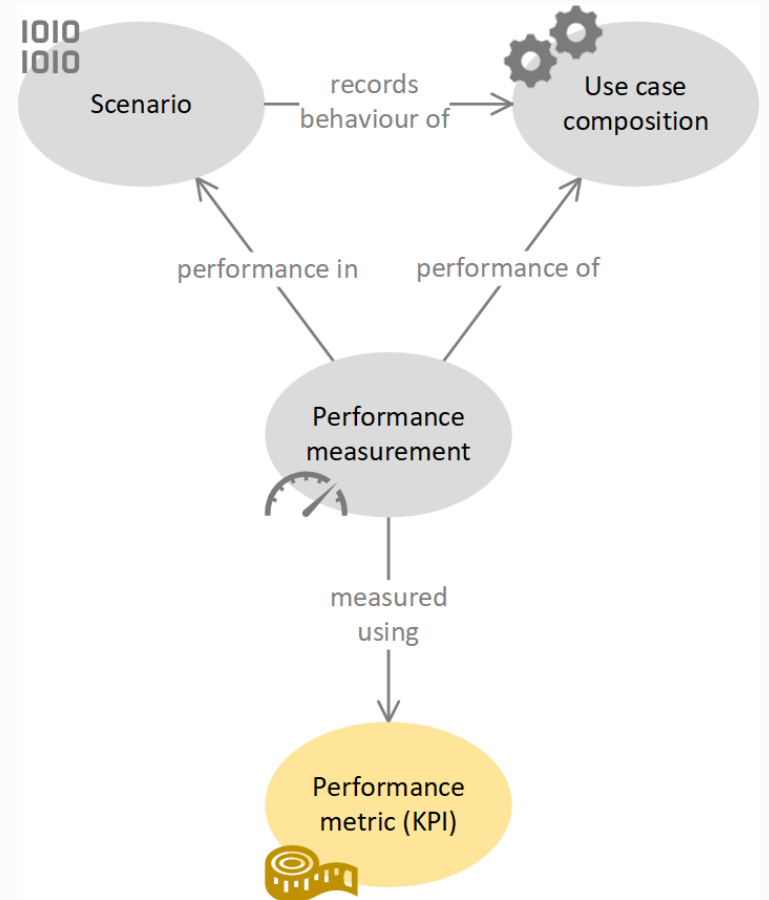
Performance

The user's objective is to maintain or improve some aspect of business *performance*

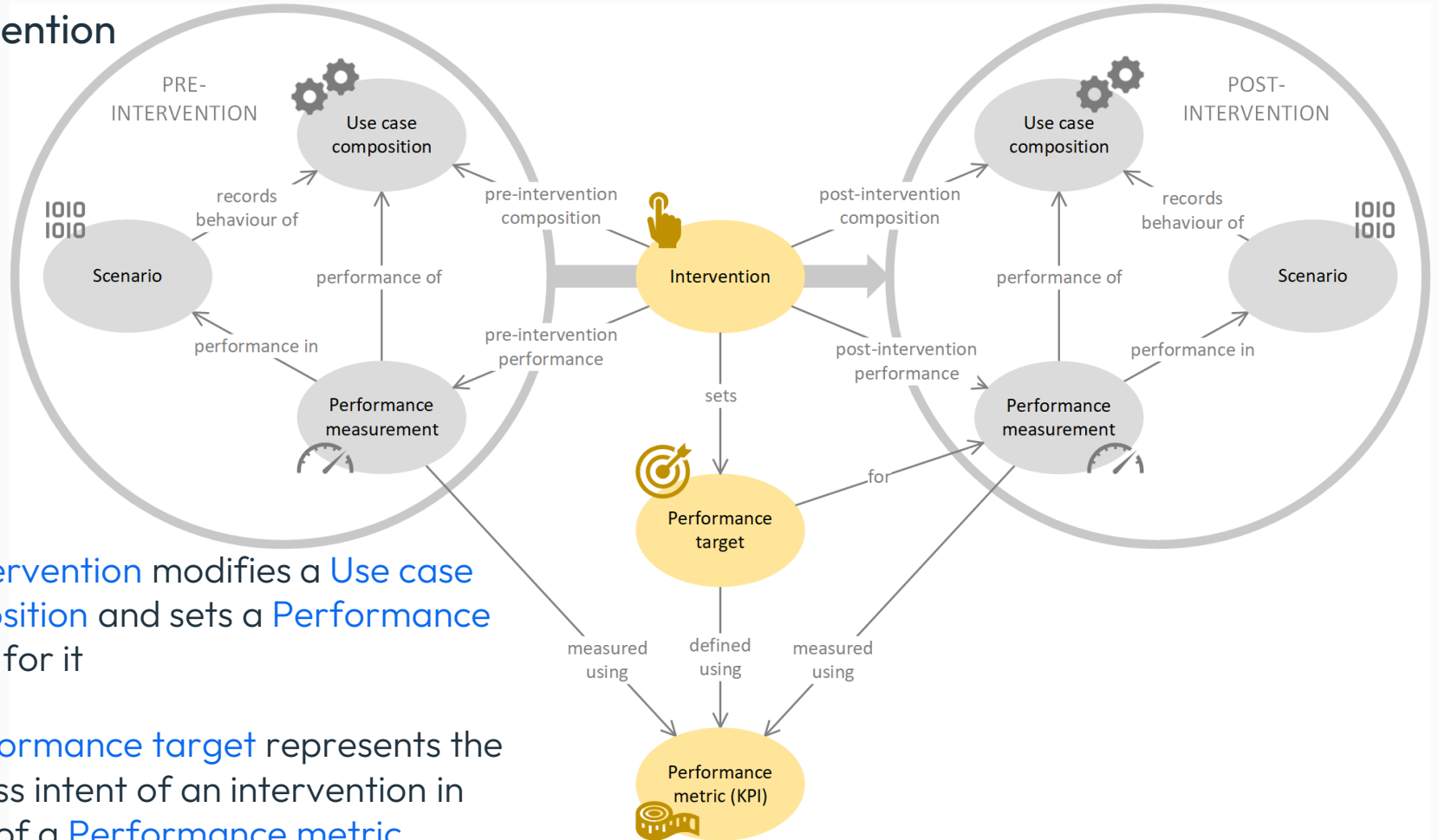
A **Performance measurement** records the performance of a **Use case composition** in a **Scenario** (real world or simulated)

A **Performance metric** defines how performance should be measured / calculated

- May address business values and/or societal values (ESG goals)
- Overall value might be assessed using a utility function of several Performance metrics



Intervention



An **Intervention** modifies a **Use case composition** and sets a **Performance target** for it

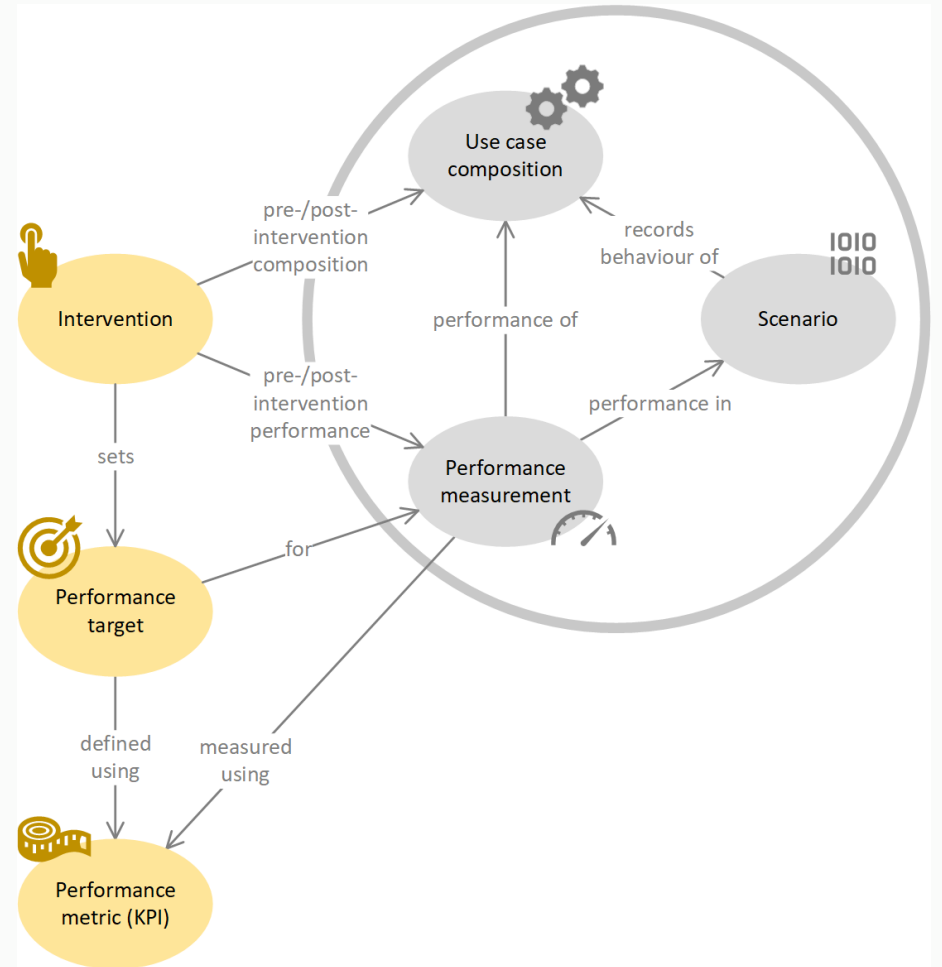
A **Performance target** represents the business intent of an intervention in terms of a **Performance metric**

Intervention

Folding pre-intervention and post-intervention instances together...

An **Intervention** modifies a **Use case composition** and sets a **Performance target** for it

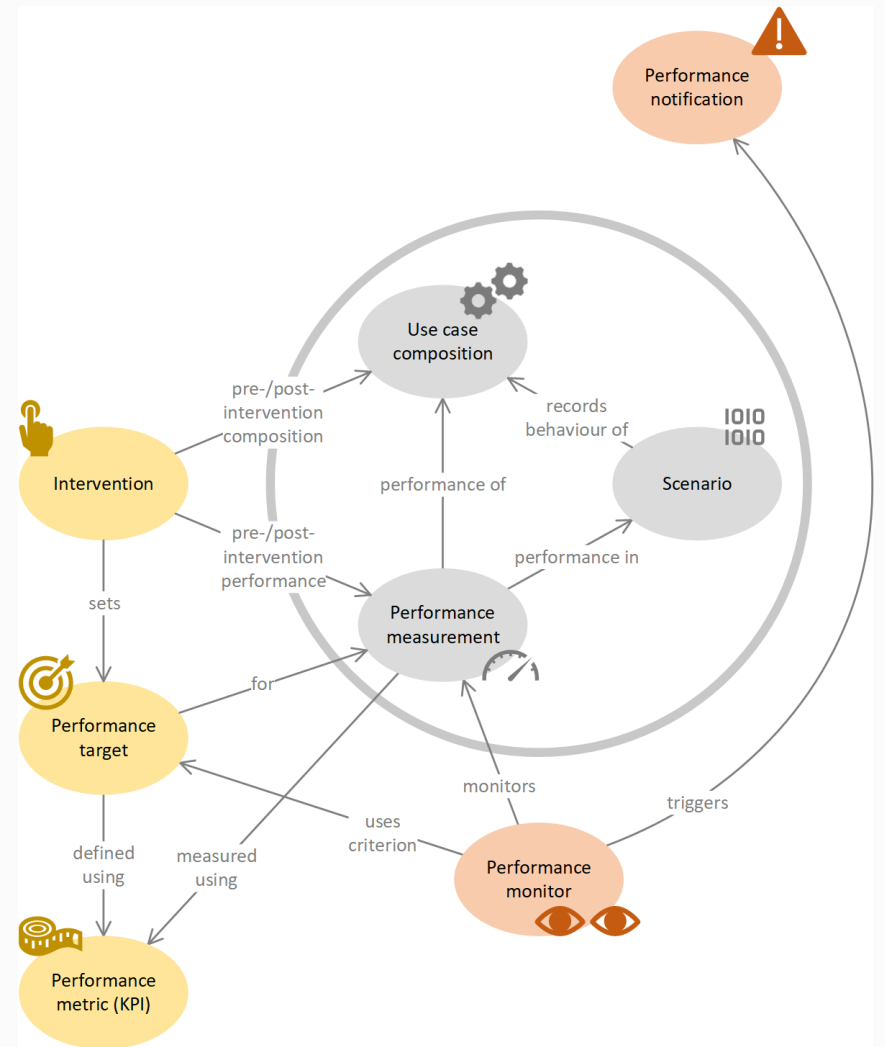
A **Performance target** represents the business intent of an intervention in terms of a **Performance metric**



Feedback

A **Performance monitor** checks a measurement against a target

A **Performance notification** is triggered when any target criterion is violated

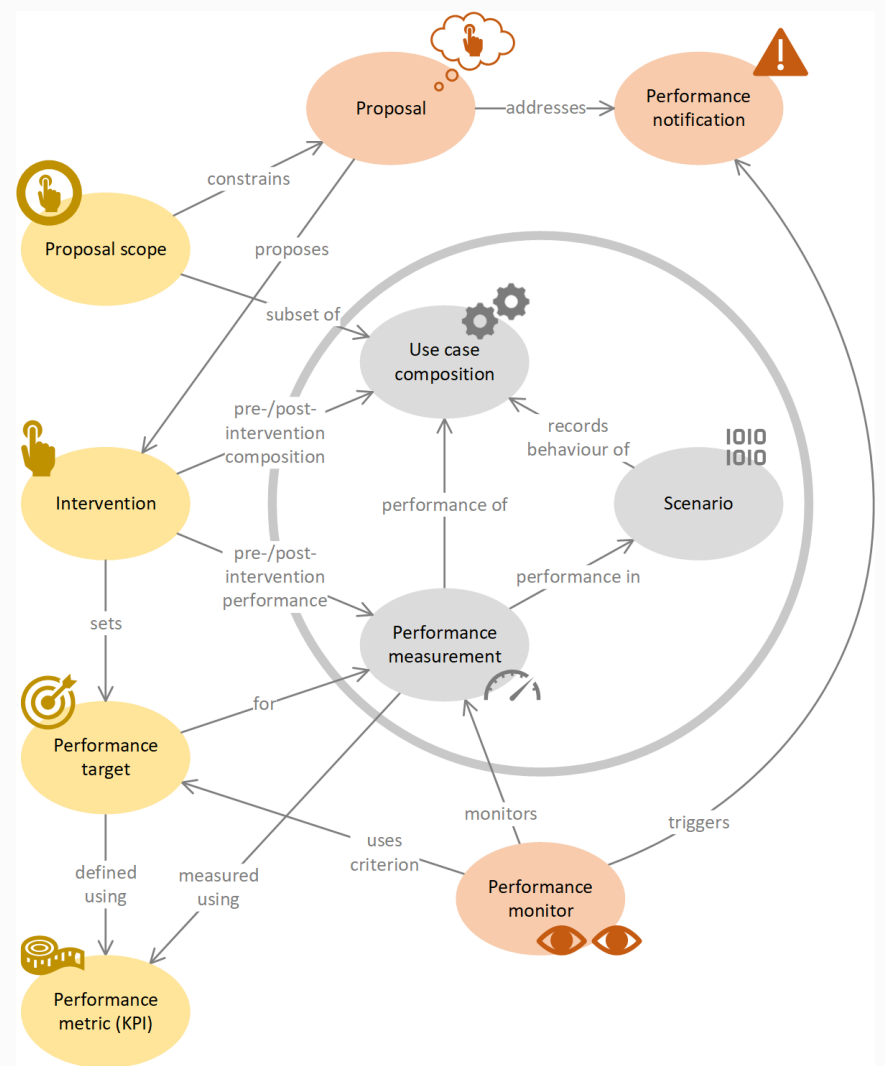


Proposal

The system may address a **Performance notification** by generating **Proposals** in line with the **Proposal scope**

The user may adopt a **Proposal** and implement it as an **Intervention**

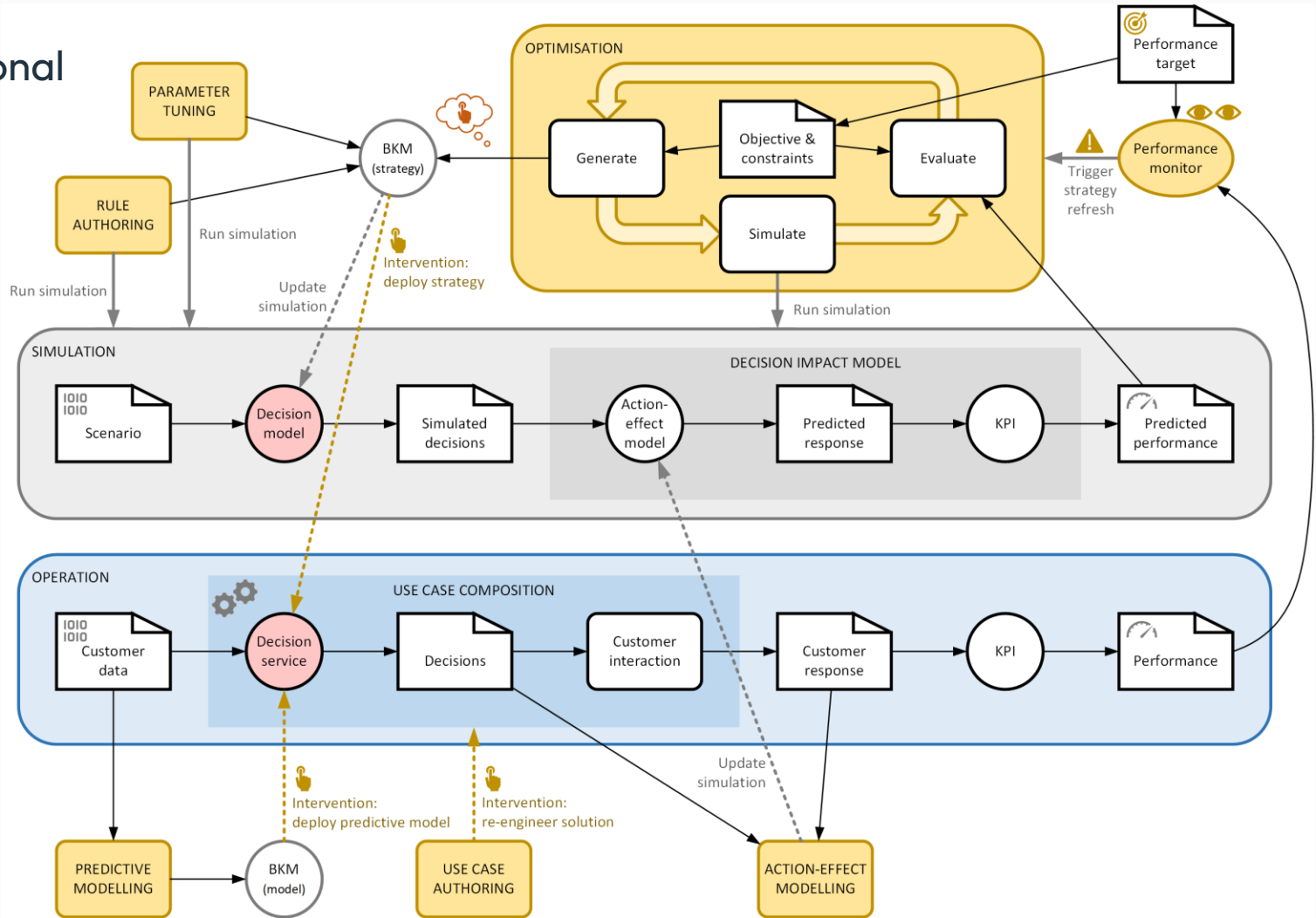
The **Proposal scope** specifies (*inter alia*) which elements of the **Use case composition** may be modified



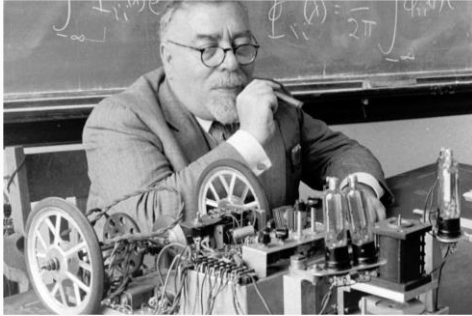


The Business Intervention Model in Context

Operational context



Historical context



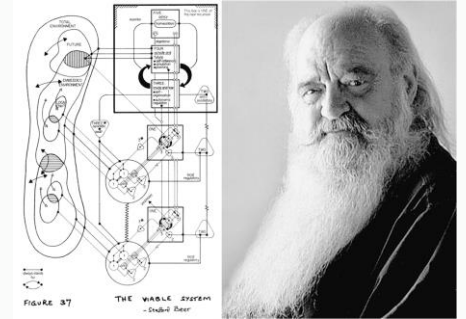
Norbert Wiener
with moth

Cybernetics:
How can an organism
steer itself?



Cybernetics,
conference 1953

=> Control theory,
information theory, robotics,
neural networks, computer
science, Artificial Intelligence



Stafford Beer
with VSM

Management Cybernetics:
How can we steer an
organisation?

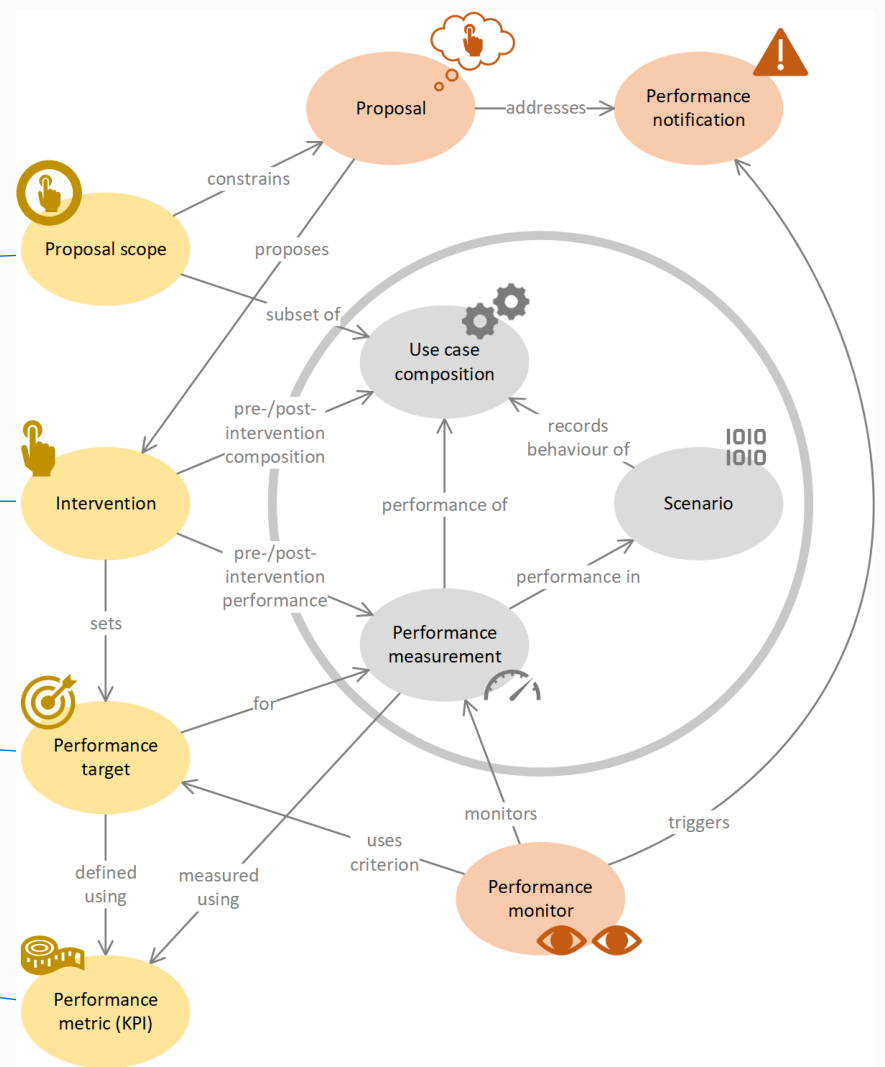
Human values in decision-making

What changes may be proposed to the user

What changes should be made to business behaviour

What performance values are desirable

How performance should be measured





Thank you