Business Vs Functional Vs Technical modeling

For a global solution description

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Introduction

Business solution and modeling layers

The goal of this presentation is to describe the three main abstraction layers of a modeling process i.e. business, functional and technical and how they can describe completely a business solution.

The presentation also attempts to provide a set of objective criteria for delimiting boundaries between modeling layers. This delimitation is crucial for a proper usage of the model by the different stakeholders

Models usage

Who uses models and for what purpose ?

- Different actors are involved with models. Each actor has its own use of the model (pulls what is valuable for him):
  - Architects
    - Want to model the system to be able to explain and foresee the system behavior
  - Business actors
    - Want to validate that what is described is indeed reflecting their needs and the business efficiently
  - Implementers
    - Want a clear and detailed enough description of the system to be able to design and implement it
  - Operators
    - Want to have a view of the procedures, systems ad technologies involved in order to support the technical infrastructure efficiently
  - ...

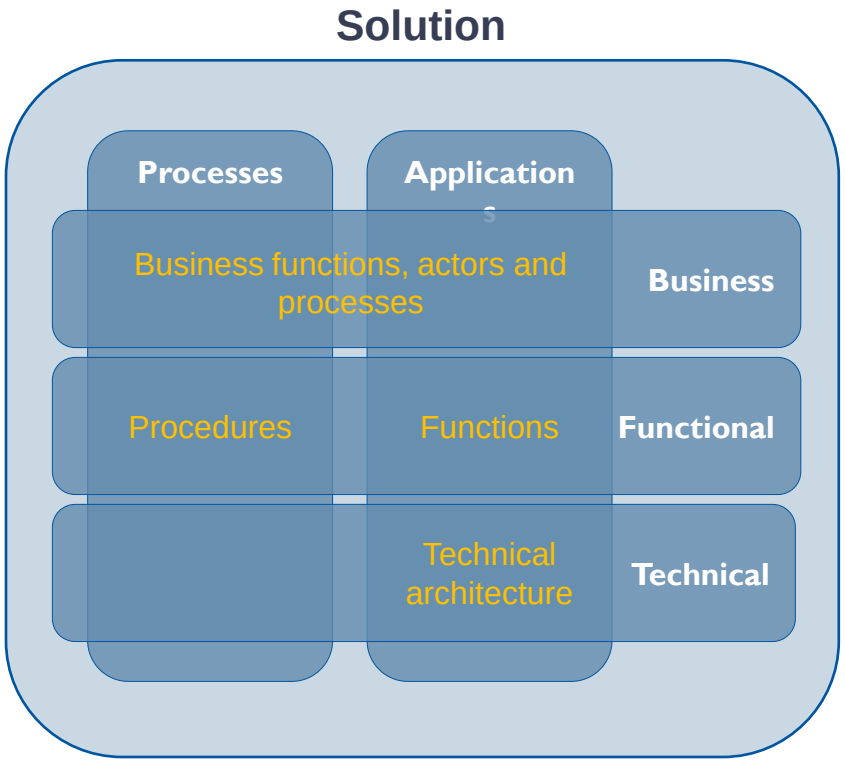
- Every "customer" of a model is interested in its own "view" of the model e.g. a business actor wants to see business "things".

Model usage dictates modeling methodology and representation

Business solution

And modeling layers

- A solution is composed of processes and applications (in variable proportions)
- Each modeling layer must cover these two dimensions
- If the process is implemented in e.g. a workflow tool, this falls in the Application dimension of the modeling exercise (partially)



Modeling layers

Business layer

- Starting modeling point
- Describe business actors, business functions and processes
- A proper identification of the business actors allows a proper delimitation of the "system" i.e. the scope of what needs to be modeled.
- Contains artifacts and concepts visible, understandable and meaningful to the business
- The "system" is a **black box**.

Functional layer

- Below business layer
- Describes the functions that support the business whether they bring directly business value to the business actors or not (no distinction is made between functional and "non-functional")
- Describes artifacts and concepts not visible or meaningful or understandable by the business
- Not specific to a particular technical implementation. If the implementation changes (new technologies, components, etc) the functional description remains valid.
- The "system" is a **transparent box**

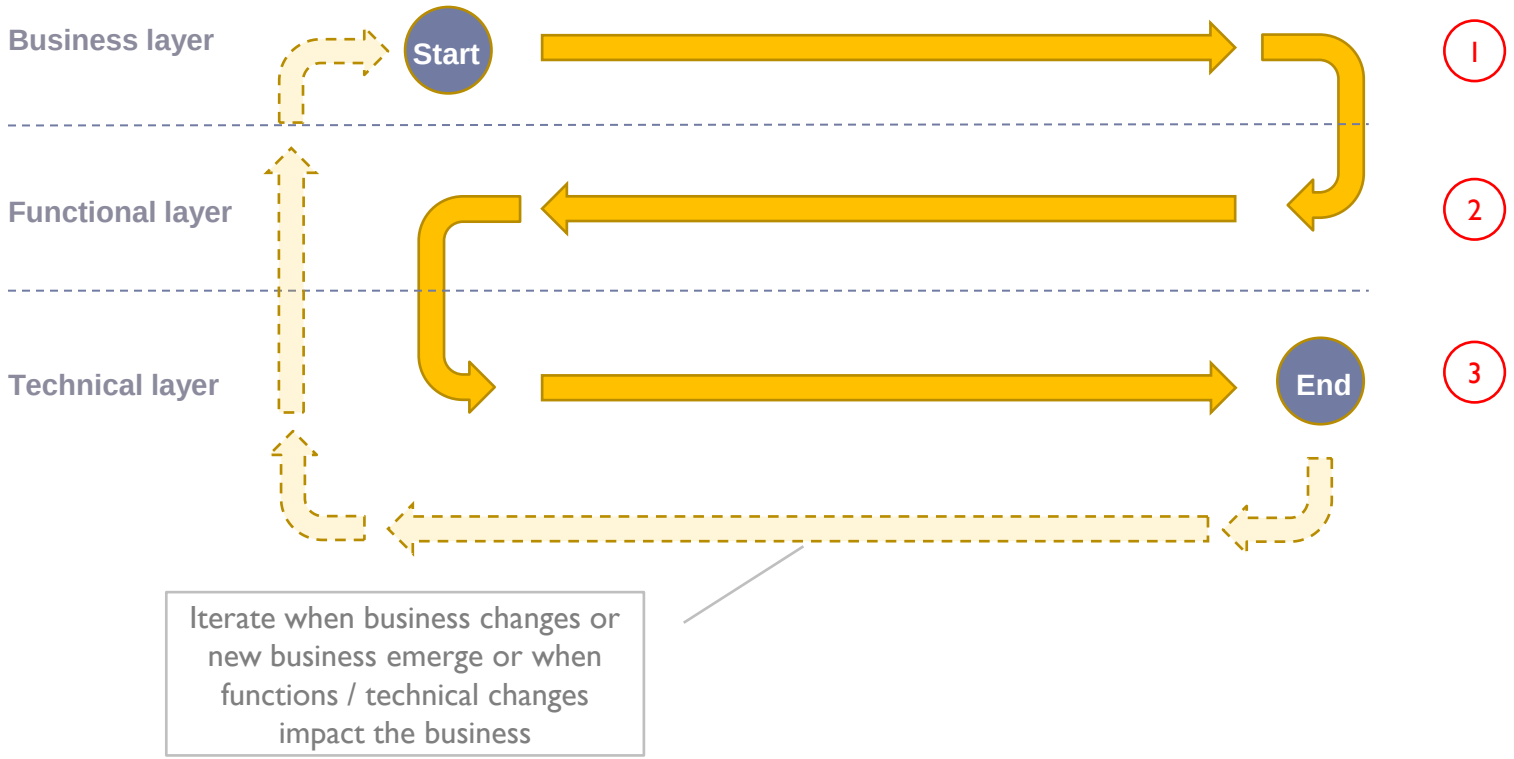
Technical layer

- Below functional layer
- Specific to a particular implementation
- Contains technical artifacts (systems, components, technologies)
- **The "system" organs are visible**

Top-down modeling approach

And iterations

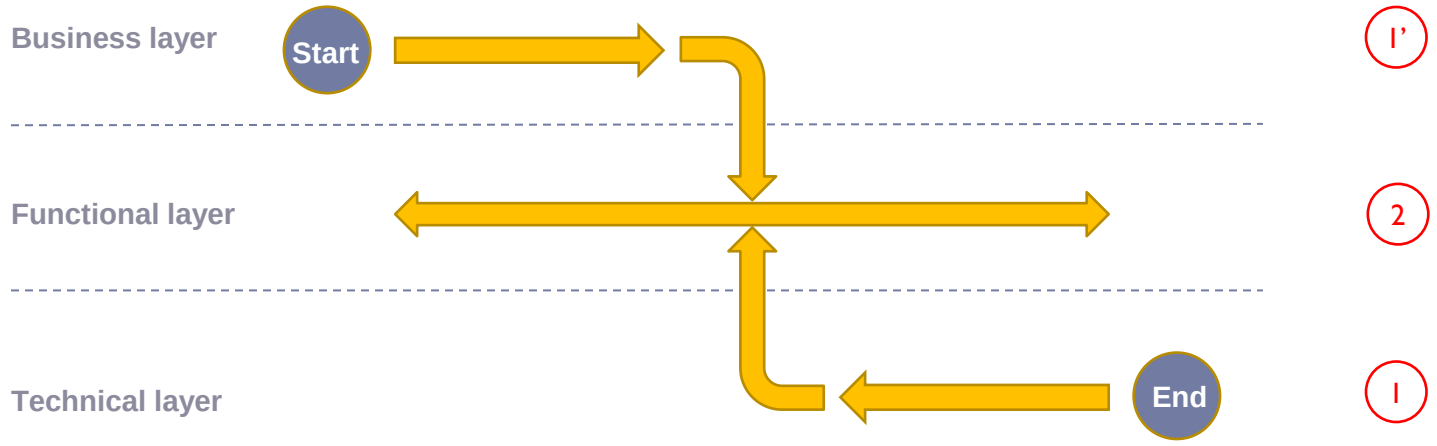
- It is always wise to start from the business needs and then derive how we will support them functionally and technically



Reverse engineering

Reconcile business and technical layers

- Necessary when the technical infrastructure exists prior to the modeling of the business and/or functional layers. How do we know then that we are addressing business needs efficiently (or at all) ?
- The technical infrastructure needs to be "re-connected" to the business.



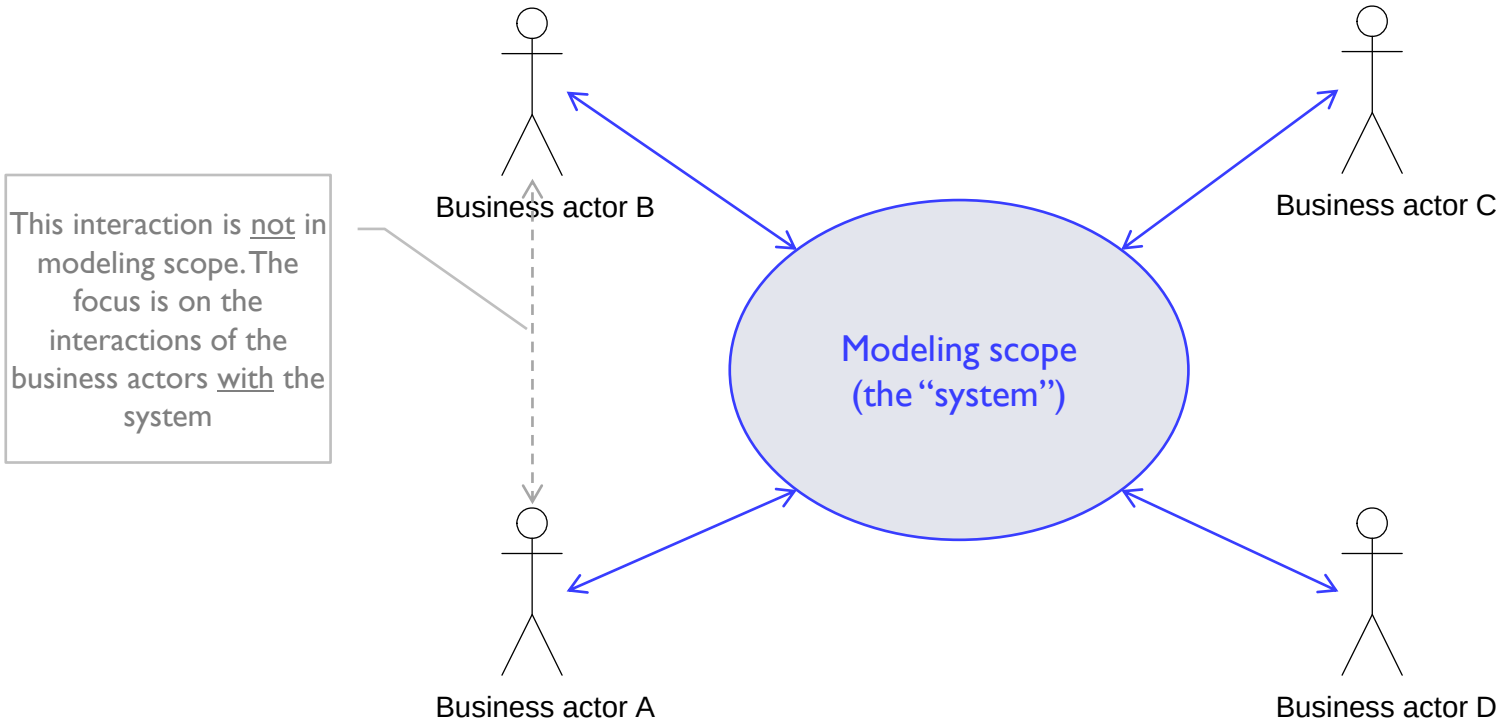
Business layer

Who, what, when, where (the 4 Ws)

- Identification of business actors
- From which the "system" boundaries can be derived (modeling scope)
- Business actor = an actor (system or person) whose (inter)actions with the "system" have visibility to the business
- Identification of the business functions that the "system" must support to address the business needs
- A business function yields business value to one or more business actors.
- Identification of business processes which describe the chronology and logic of exchanges between the actors and the "system"
- A specific piece of business data and its associated business processing is called a business object.

Modeling scope

The “system”



Functional layer

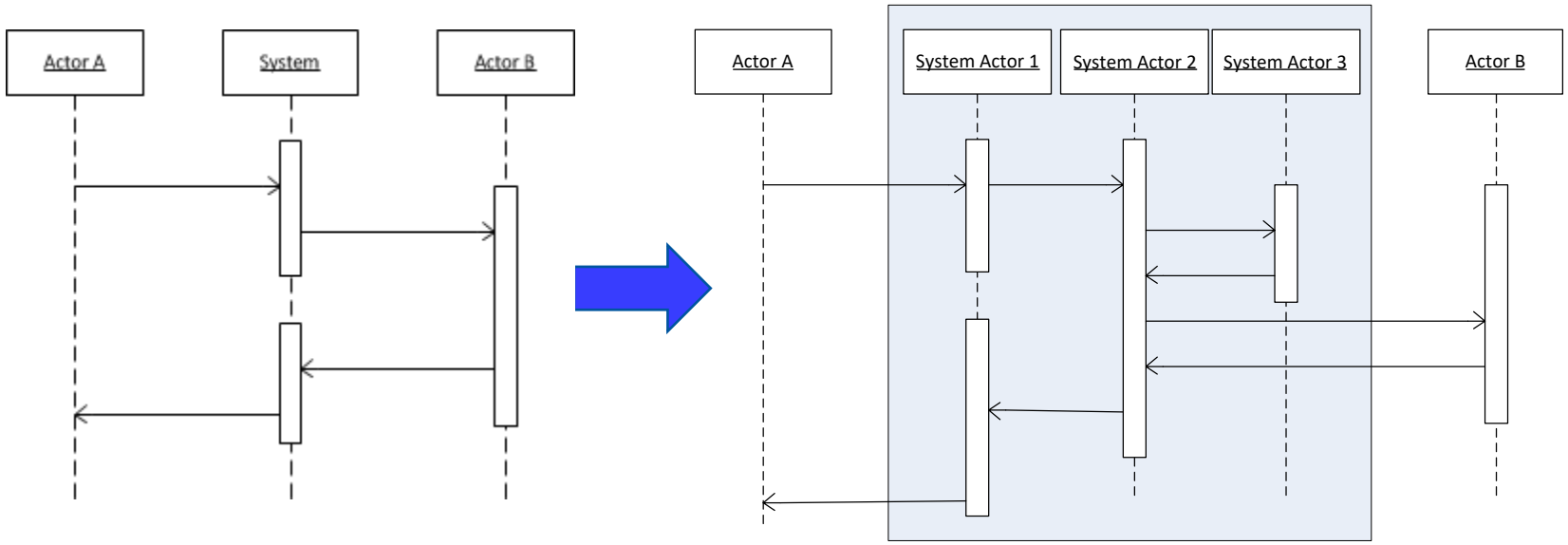
The 4 Ws "under the hood" (but not technical)

- Refine Business processes by exposing system external and internal actors as well as functions supporting the business functions (sub-functions not visible/meaningful to the business actors)
- Provides a logical data model
- Interface specifications (system, GUI)
- A refined object model
- Messages (logical structure)
- …

Business Process Vs procedures

Business Vs functional layer representation

- Business processes involve the business actors and the "system"
- Procedures are more detailed and make the non-business actors (internal to the system) visible
- The Procedures belong to the functional layer because the internal actors are not meaningful/visible businesswise
- Here is the same interaction (sample) depicted from the business (process) and functional (procedure) perspective:



Technical layer

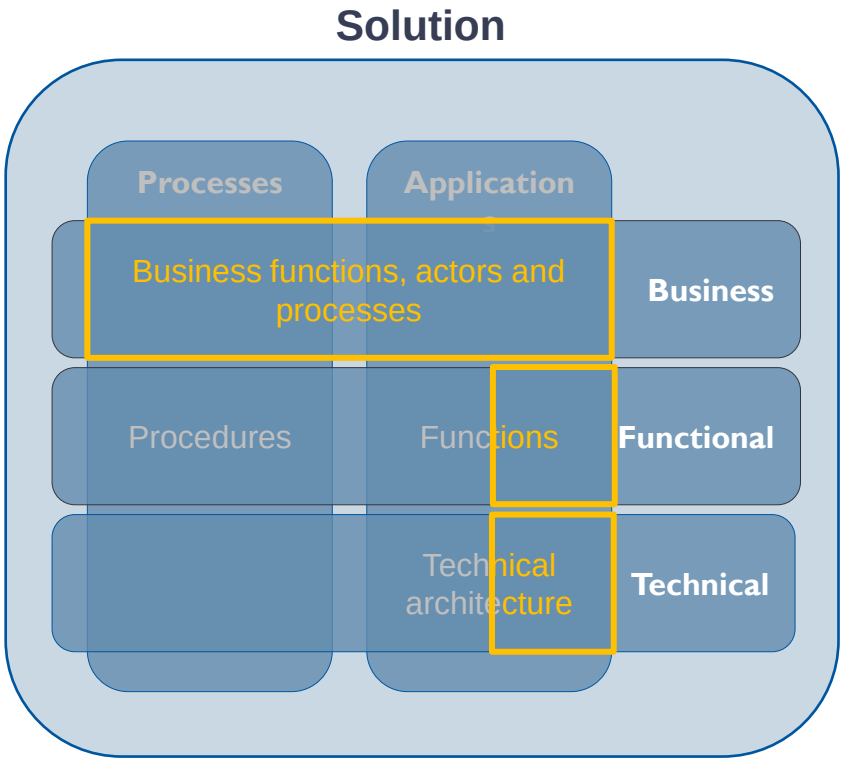
How

- Below functional design
- Specific to a particular implementation
- Contains technical artifacts (systems, components, technologies)
- This is the description of "system" organs and their functioning

Guidelines for Solution Architect

Architecture strategy

- Typically, the guidelines for Solution Architects focus more on software functions that yields value directly to the business actors (less coverage of "non-functional" and operational stuff)
- The procedures aspects is also less covered.



End of presentation

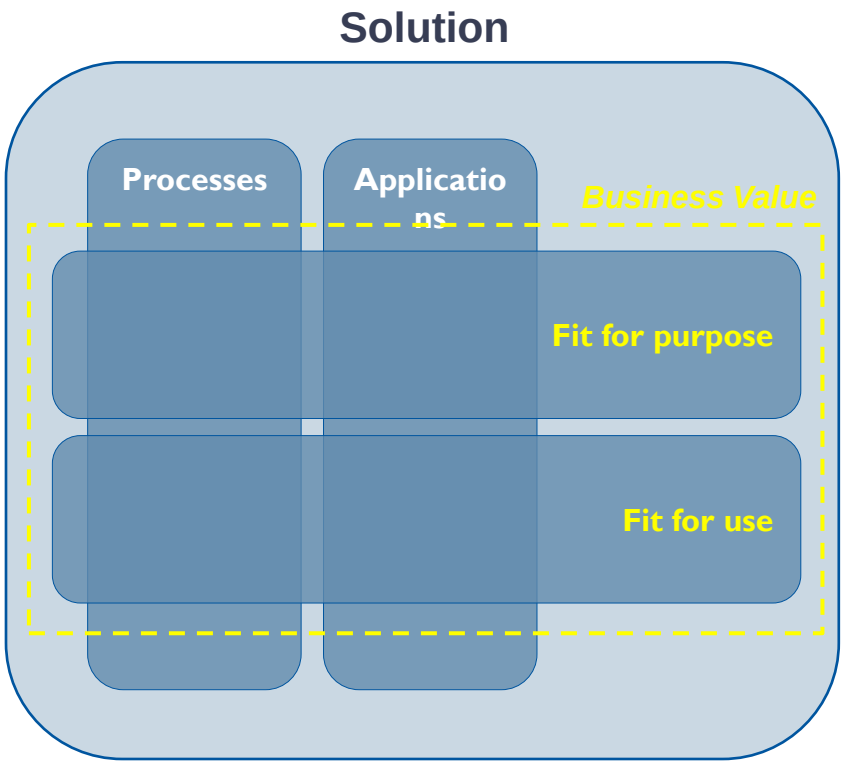
Questions

Spare slides:

- Business solutions and business value
- Business solutions quadrants

Business solutions and business value

- Business value is composed of fitness for purpose (utility) and fitness for use (warranty)



Business solutions quadrants

Implementation and Operation of processes and applications

- The four quadrants must be covered for a complete coverage of the solution