Best Practises in Process Design

Lubomír Dočkal & Lubomír Hruban

Last Lecture: BPMN L2

- Precise ordering of activities
- Detailed messaging
- Signals
- Specific task types
- More events
  - Additional types
  - Intermediate events
  - Boundary events
- Exception handling

- **BPM** Business Process Management
  - IT-Business approach to manage a company
  - covers a lot of technical and business disciplines
- **BPMS** Business Process Management System
  - technical system which made BPM live
  - heart of the modern BPM
- **BPMN** Business Process Model and Notation
  - describes process in precise, non-ambiguous way
  - programming/diagrammatic language for a process modeller

Outline

- Best practises introduction

- Basic mistakes in process design

- Petri nets

- 7 guidelines for better models

- From abstract process to executable one

- Process redesign, pursuing the desired effect

Best practises introduction

- Proved useful over time

- Evolved to be the best we can get

- Just a practise not the must obey law

- Frees us from 'reinvent a wheel' case

- Always an example which needs refinement

What is (process) model

- It is always an abstraction of a real world

- It let us better understand the problem

- It is very powerful communication tool

- Appropriate for target audience
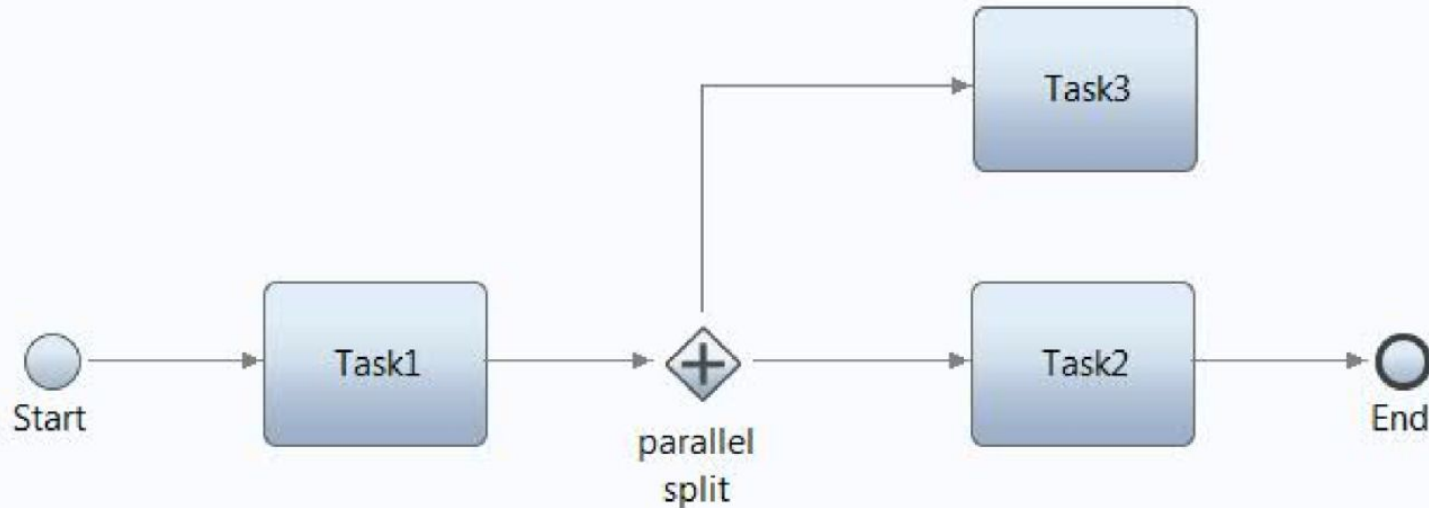
- We have to balance *complexity* VS *information value*
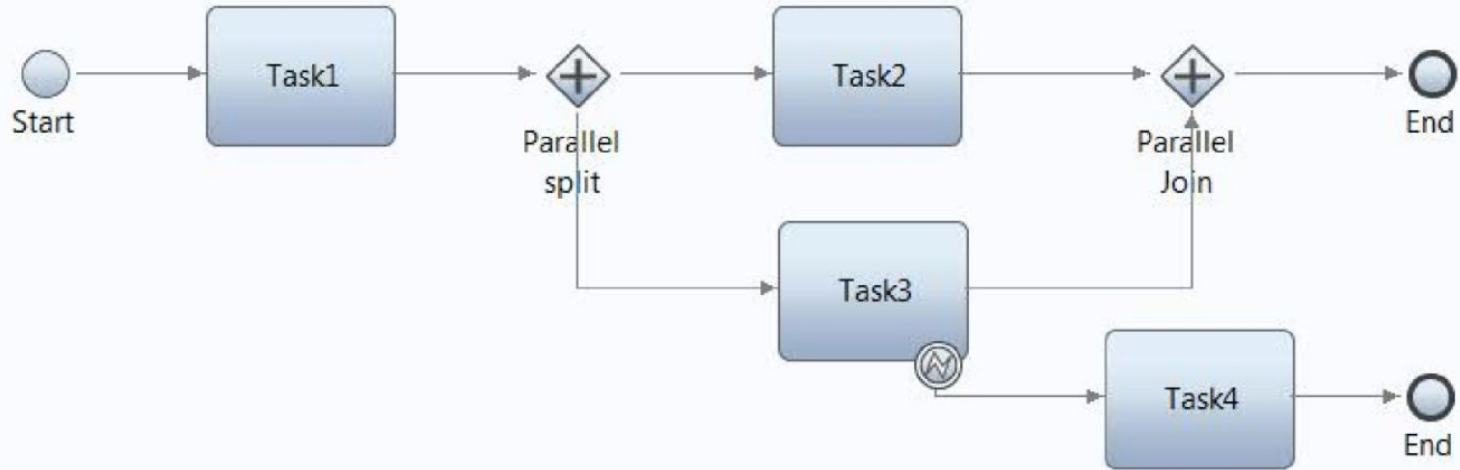
Basic mistakes in process design
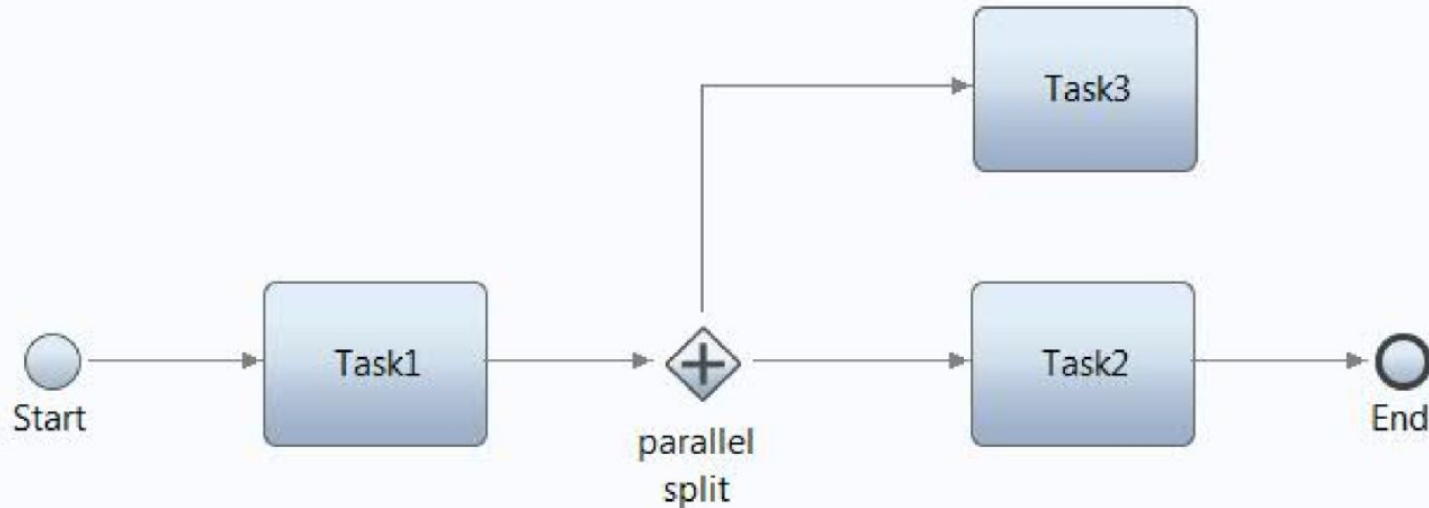
What is wrong?

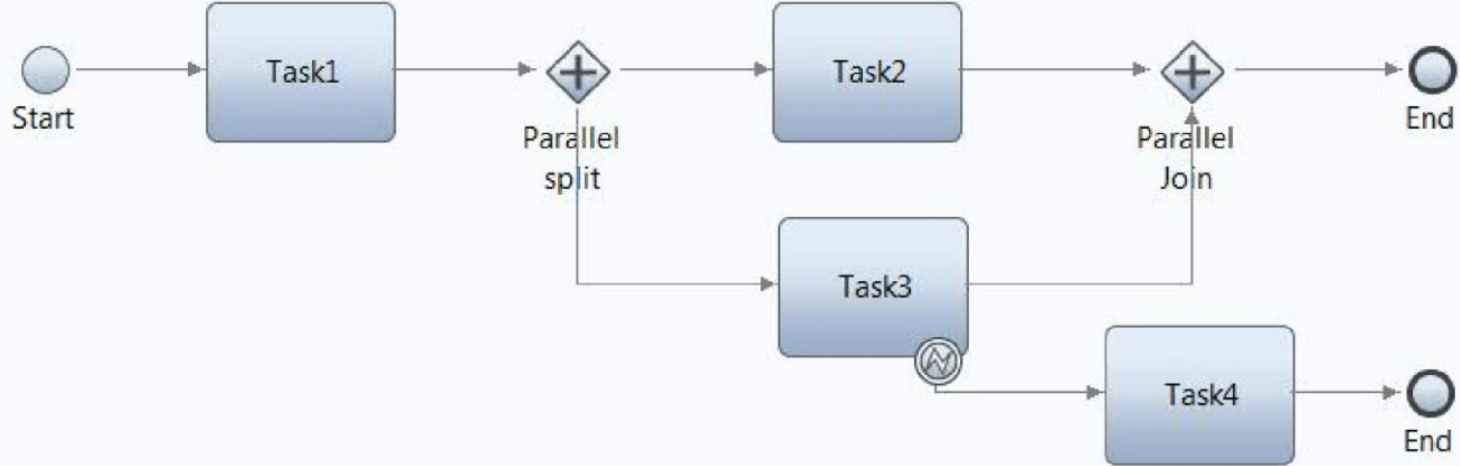# Basic mistakes in process design

Dangling token at Task3!

Basic mistakes in process design
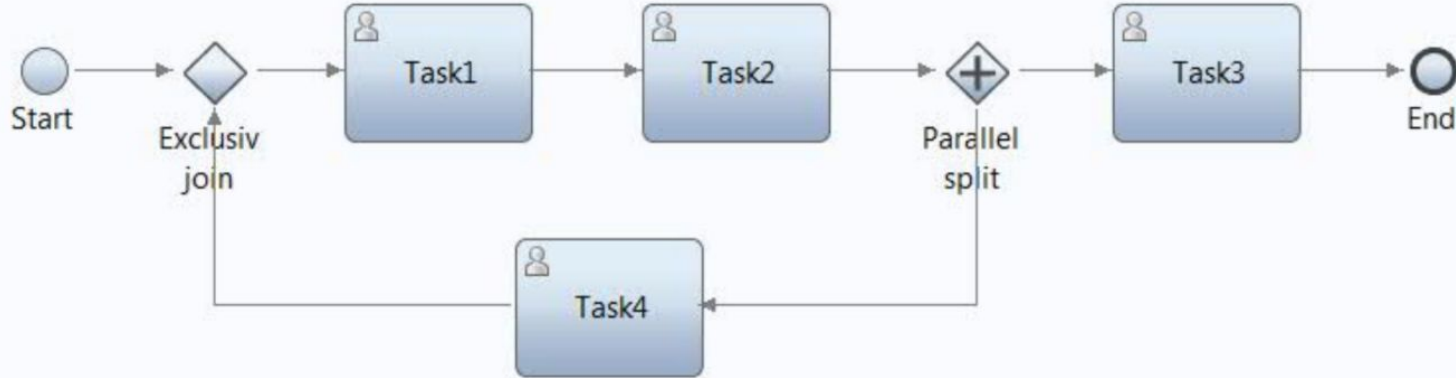
What is wrong?

Basic mistakes in process design

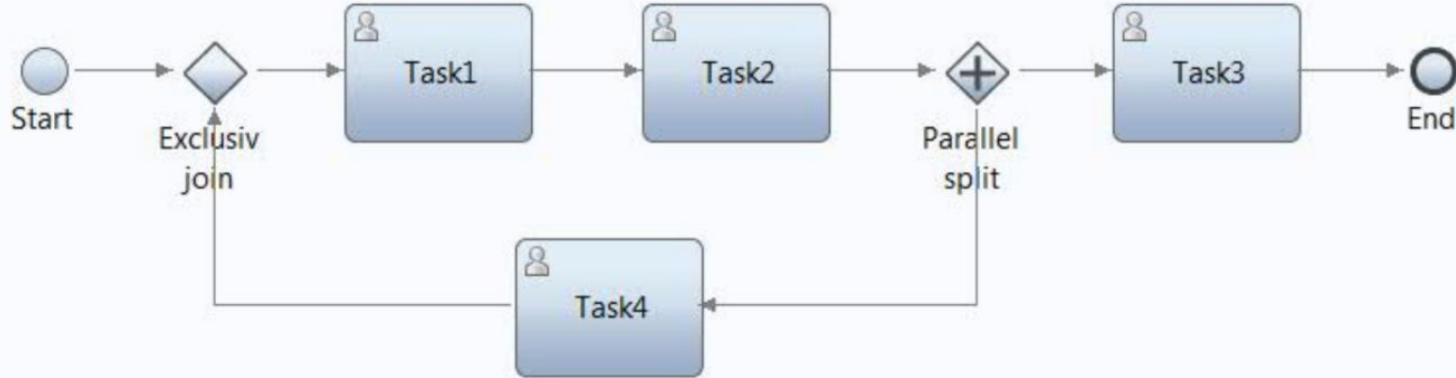Possible deadlock caused by boundary event!

Basic mistakes in process design
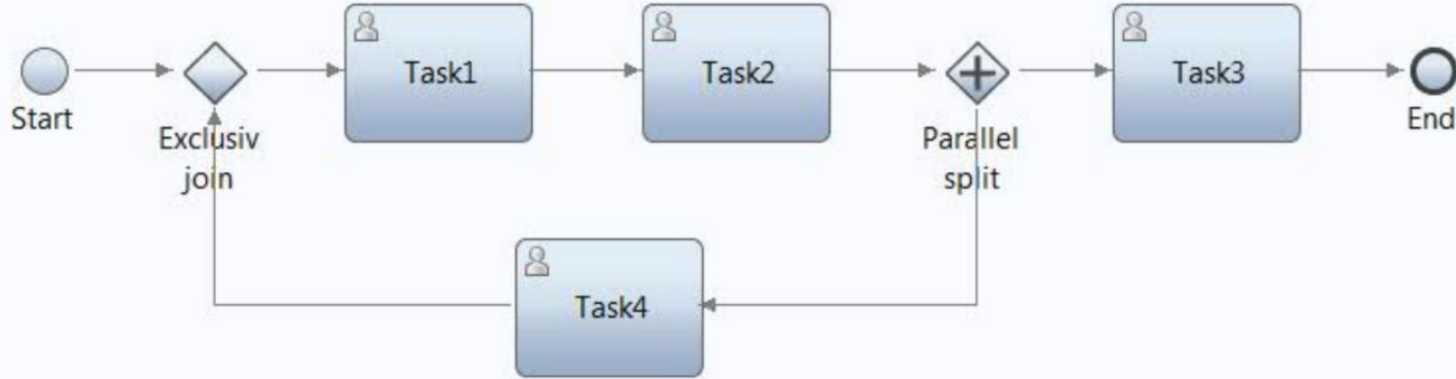
What is wrong?

Basic mistakes in process design

Never ending process cause by token duplication!

Basic mistakes in process design

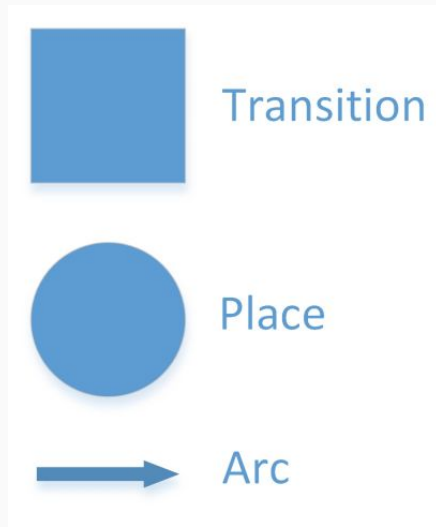Never ending process cause by token duplication!

Petri Nets

- Theoretical concept of processes and their execution

- Strong mathematical background

- Lot features can be proven using PN:

    - deadlock free

    - reachability

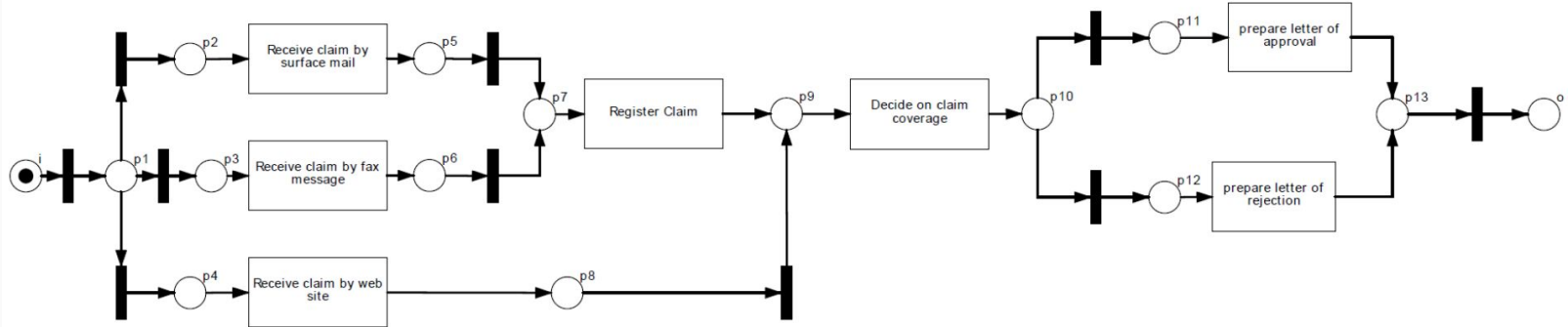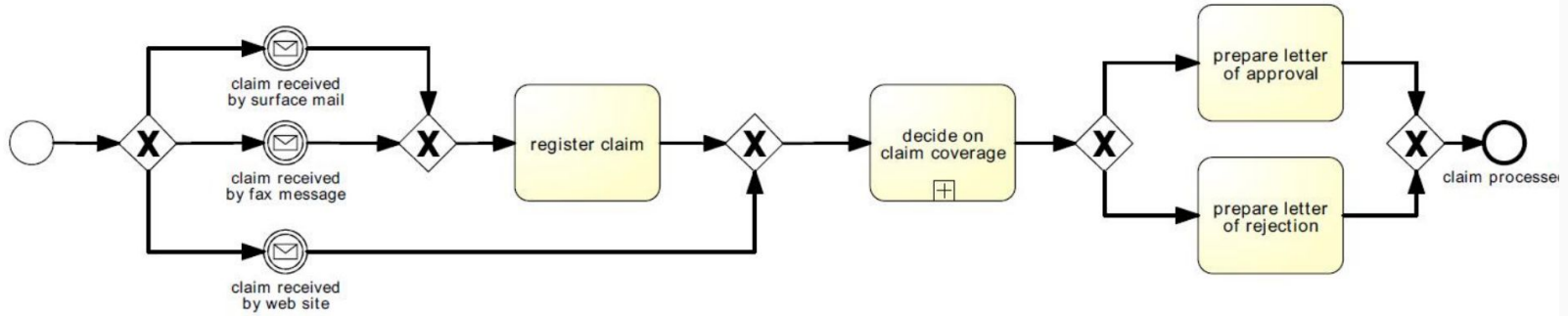   - fairness

Petri Nets

PN is a directed bipartite graph

- Petri net consists of three basic elements

Transition

Place

Arc

Token

- dynamic element of the model
- token sits in places
- move along the arcs
- are moved when transition fires
- transition may fire only if it is enabled

Petri Nets

7 guidelines for better models

- For clear and understandable models

- Usability is a quality issue

- Tells only how, nothing about what

- Change only structure not behaviour

- Some have contradictory effect, so choose wisely
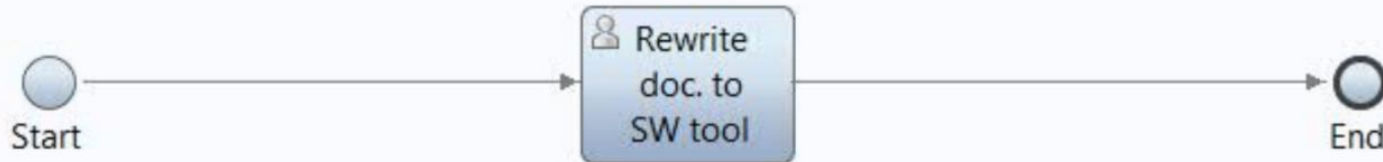
- Prioritised by industry experts

7 guidelines for better models
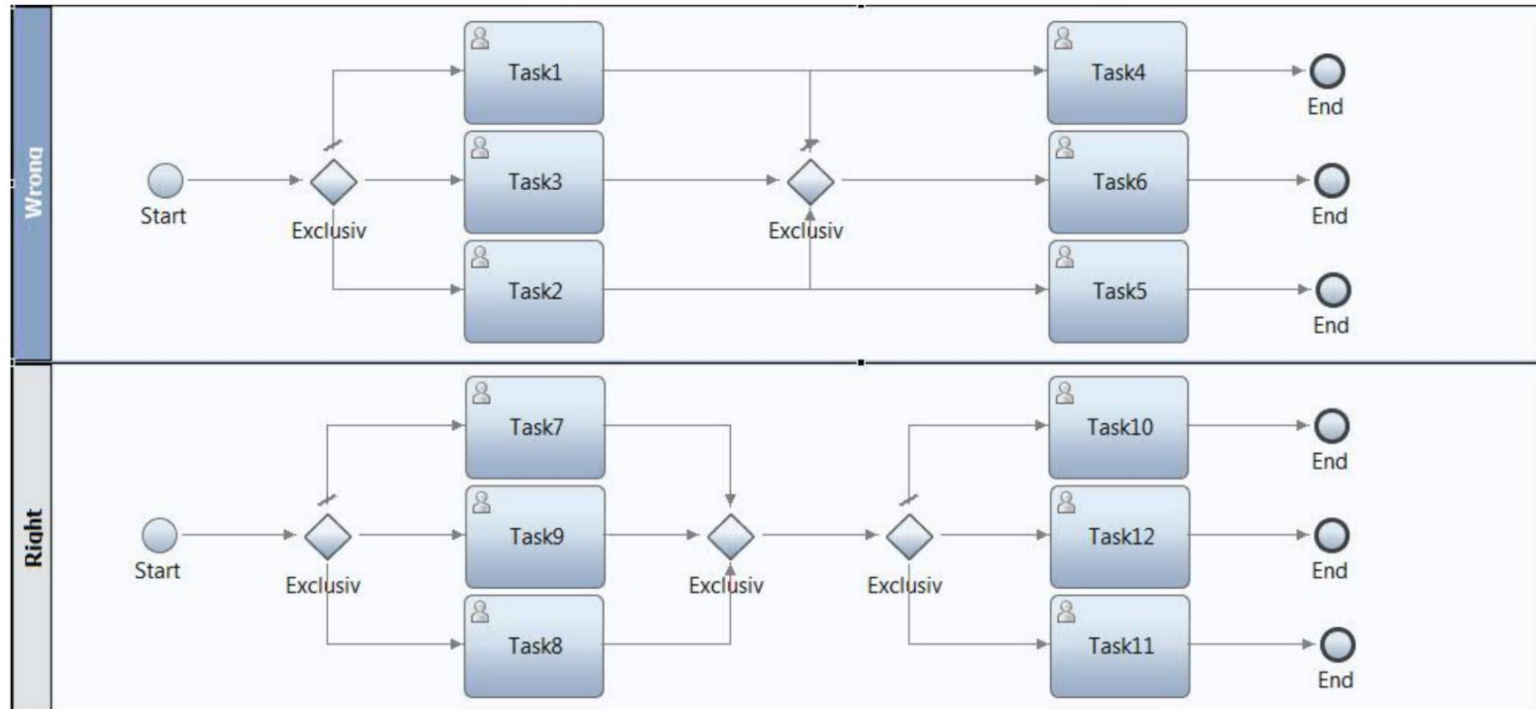
Use as few elements in the model as possible
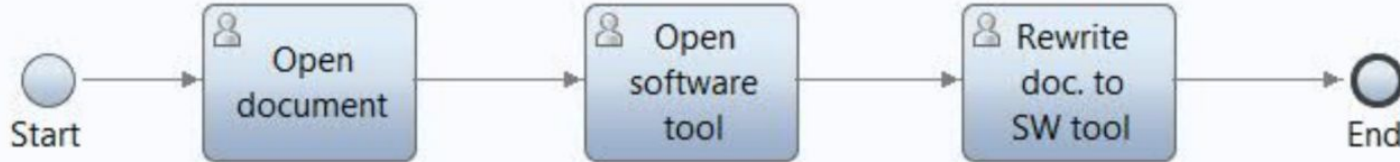
7 guidelines for better models
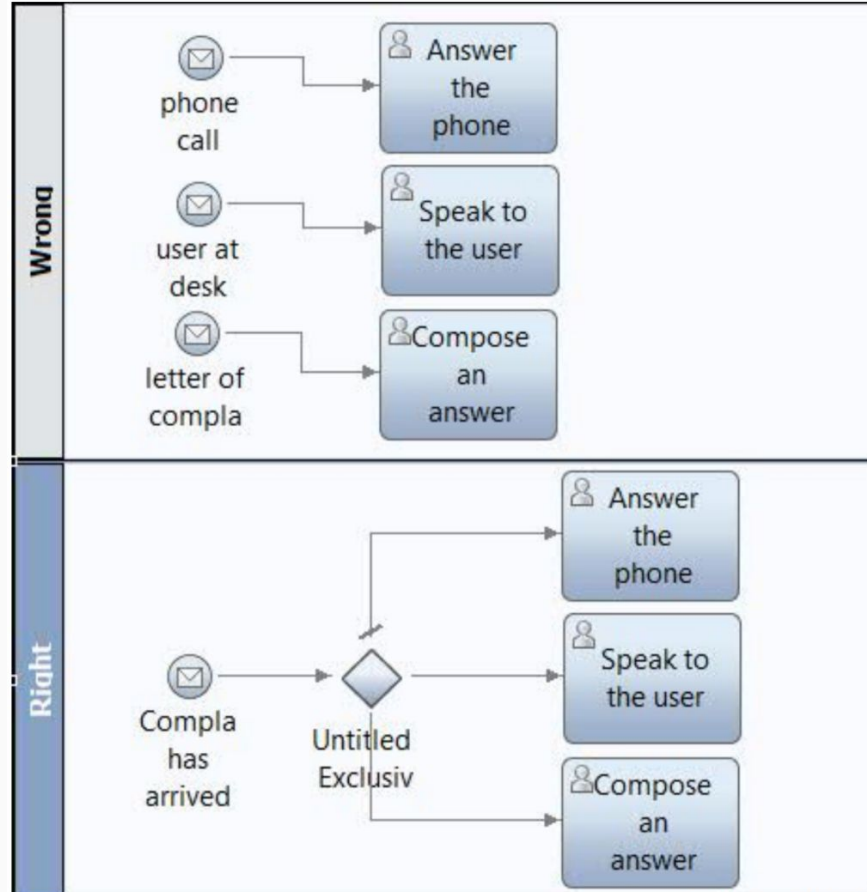
Minimize the routing paths per element

Use one start event

Model as structured as possible
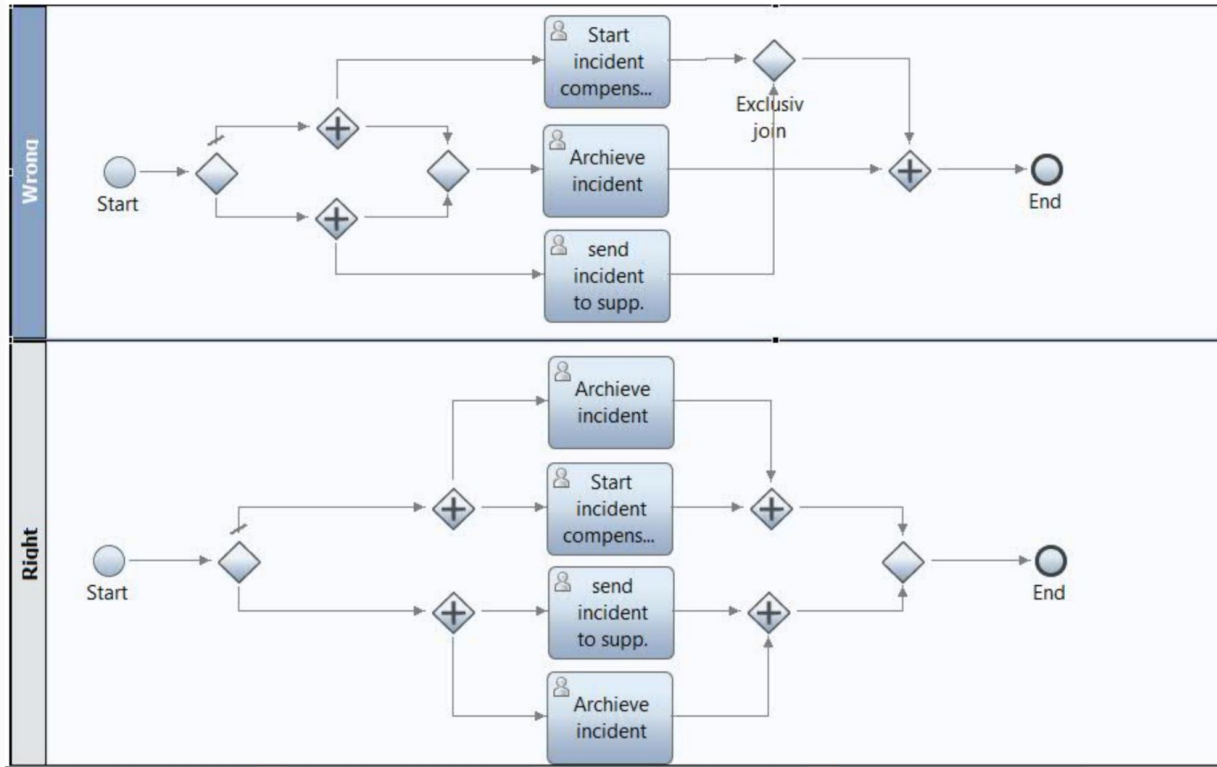
Avoid inclusive gate elements
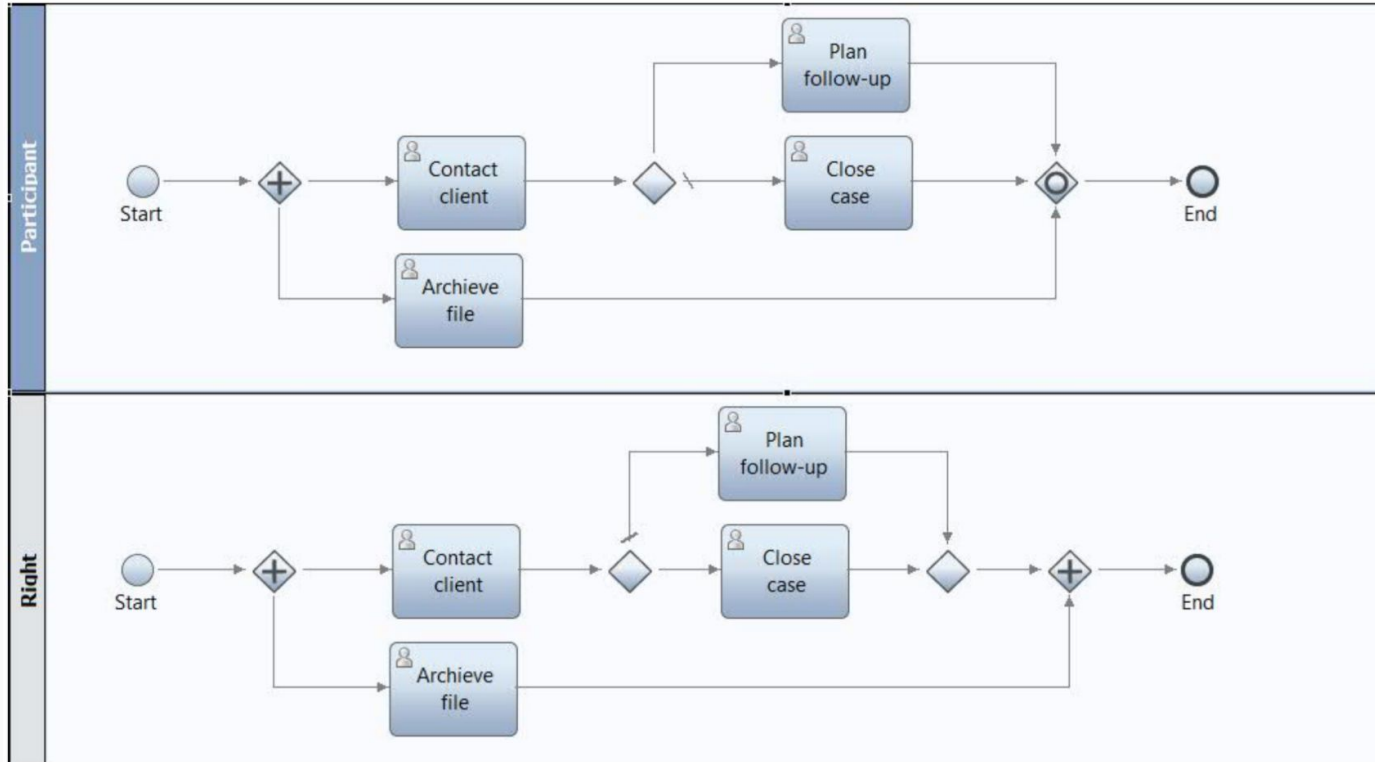
7 guidelines for better models

Use verb-object activity labels
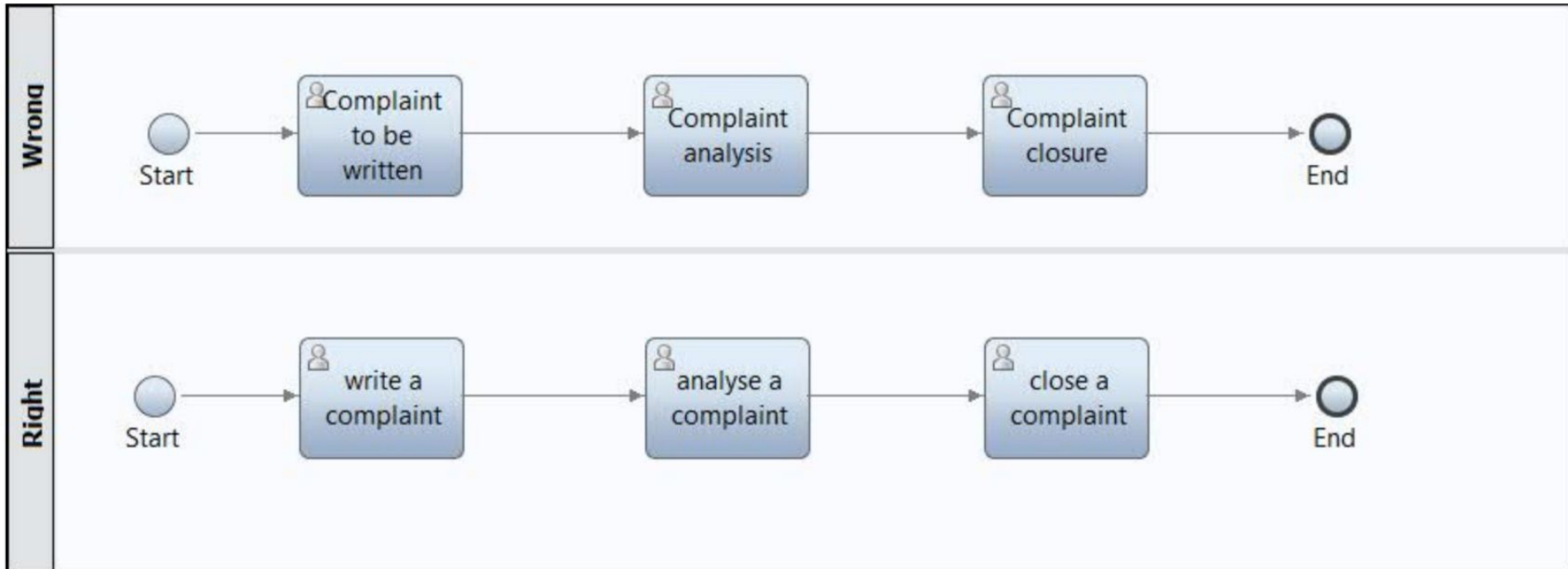
Decompose the model if more than 50 elements
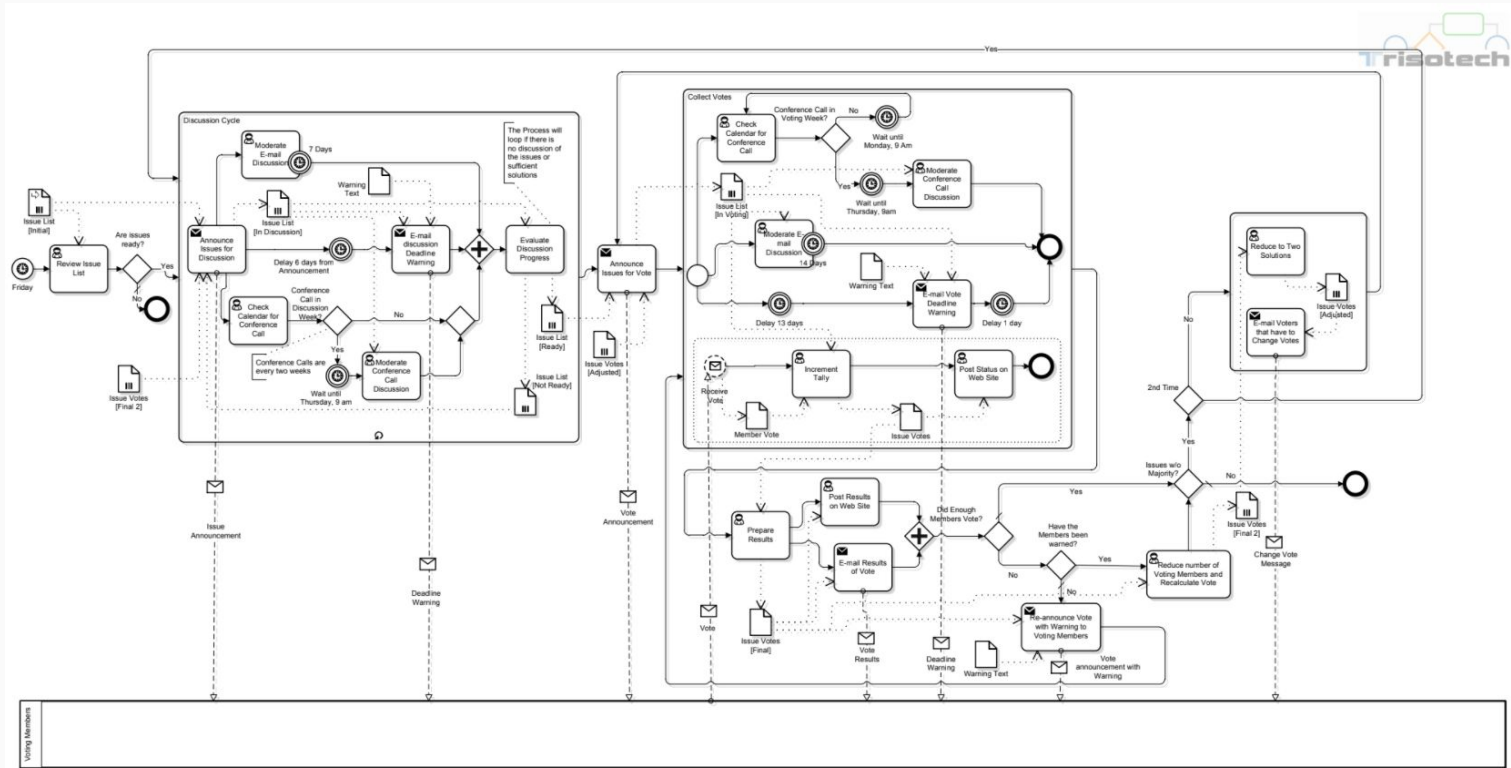
7 guidelines for better models

Decompose the model if more than 50 elements
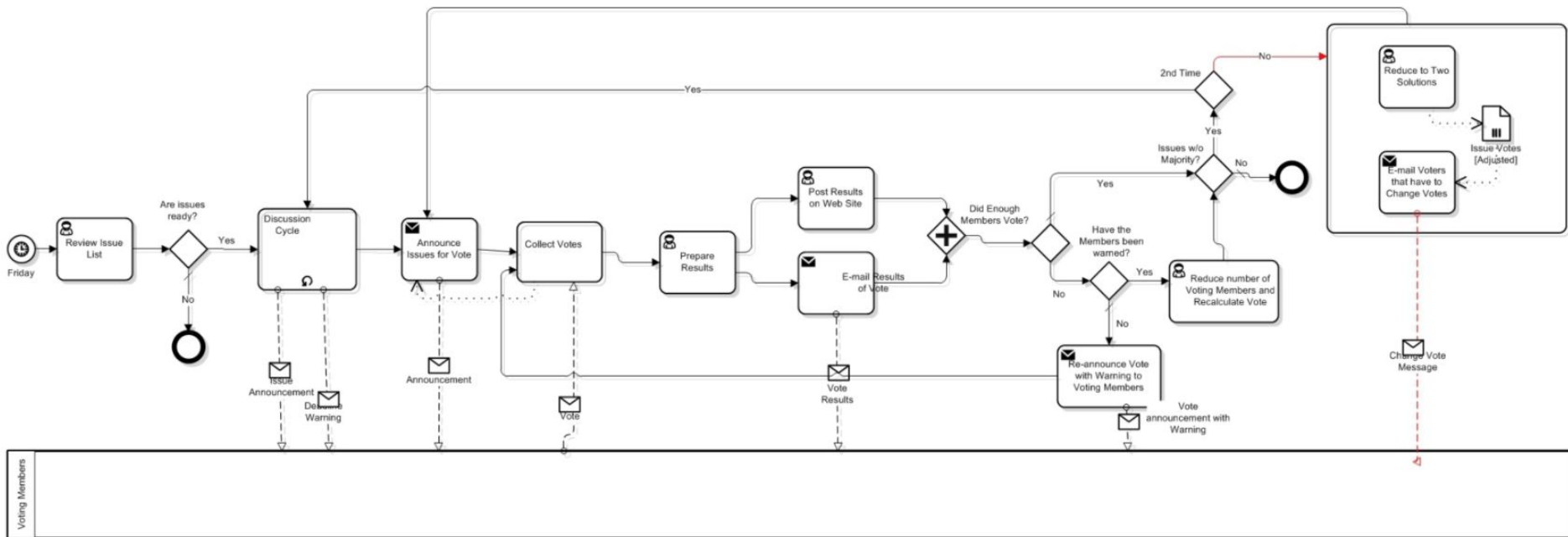
7 guidelines for better models

Decompose the model if more than 50 elements
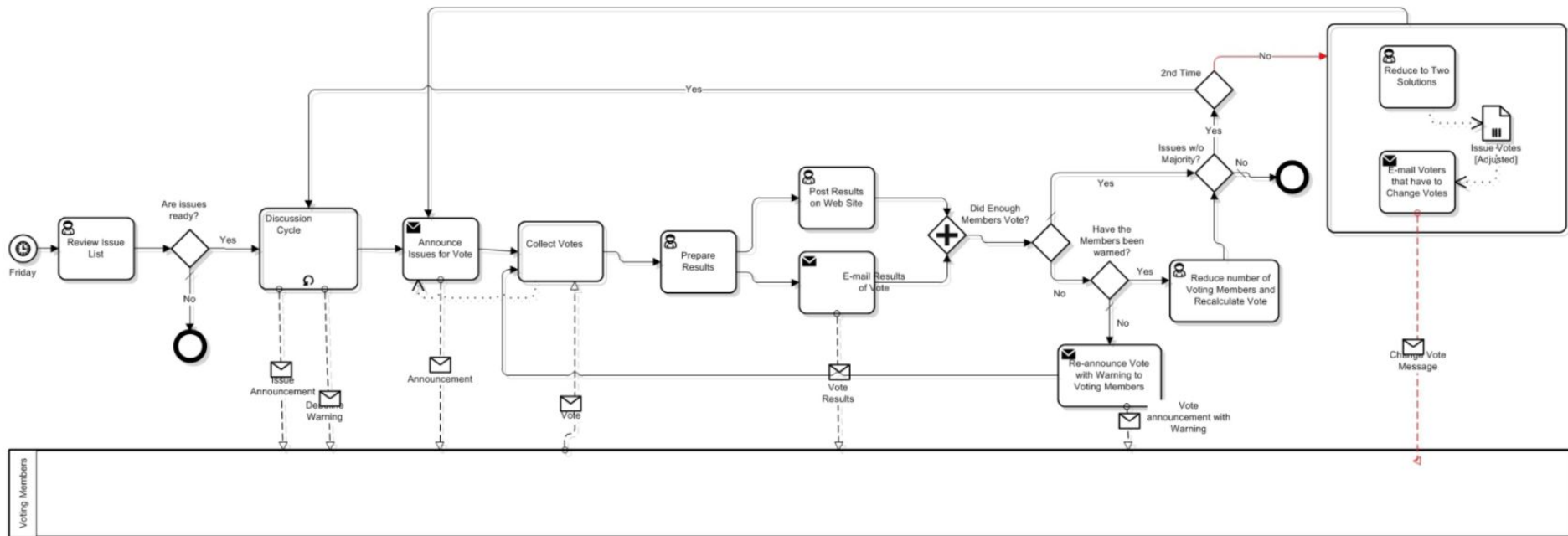
7 guidelines for better models

- Use as few elements as possible

- Minimize the routing paths per element

- Use one start event

- Model as structured as possible

- Avoid inclusive gate elements

- Use verb-object activity labels

- Decompose a model with more than 50 elements

From abstract to runnable

- start with a process understandable by business people
- such process is build up to:
  - follow business goals
  - add value
  - etc.
- end with a process executable by a machine
- such process should be:
  - without ambiguity
  - complete
  - fault tolerant

From abstract to runnable

Missing time-out: Assumes that the other party will respond
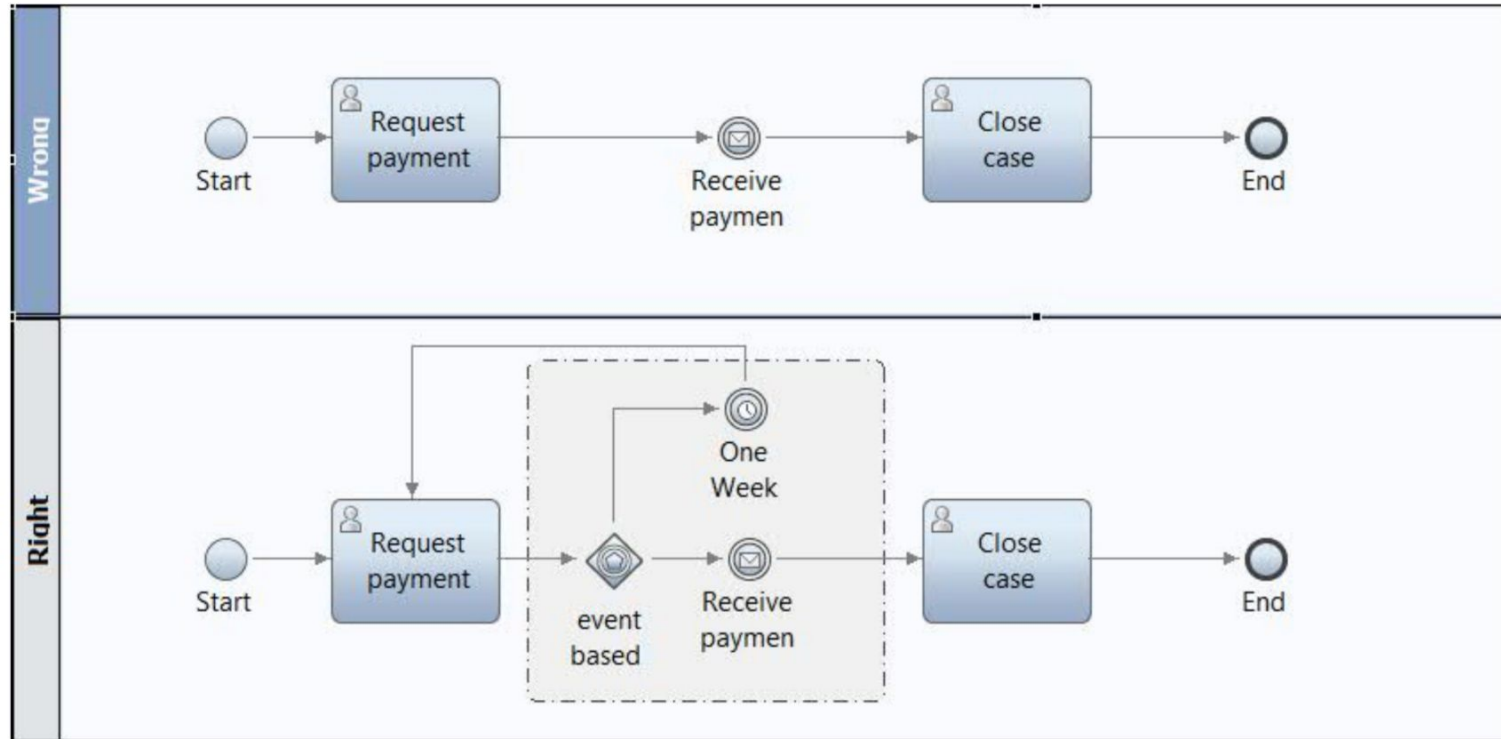
From abstract to runnable

Inappropriate handling of revision request
It is better to continue as the same case
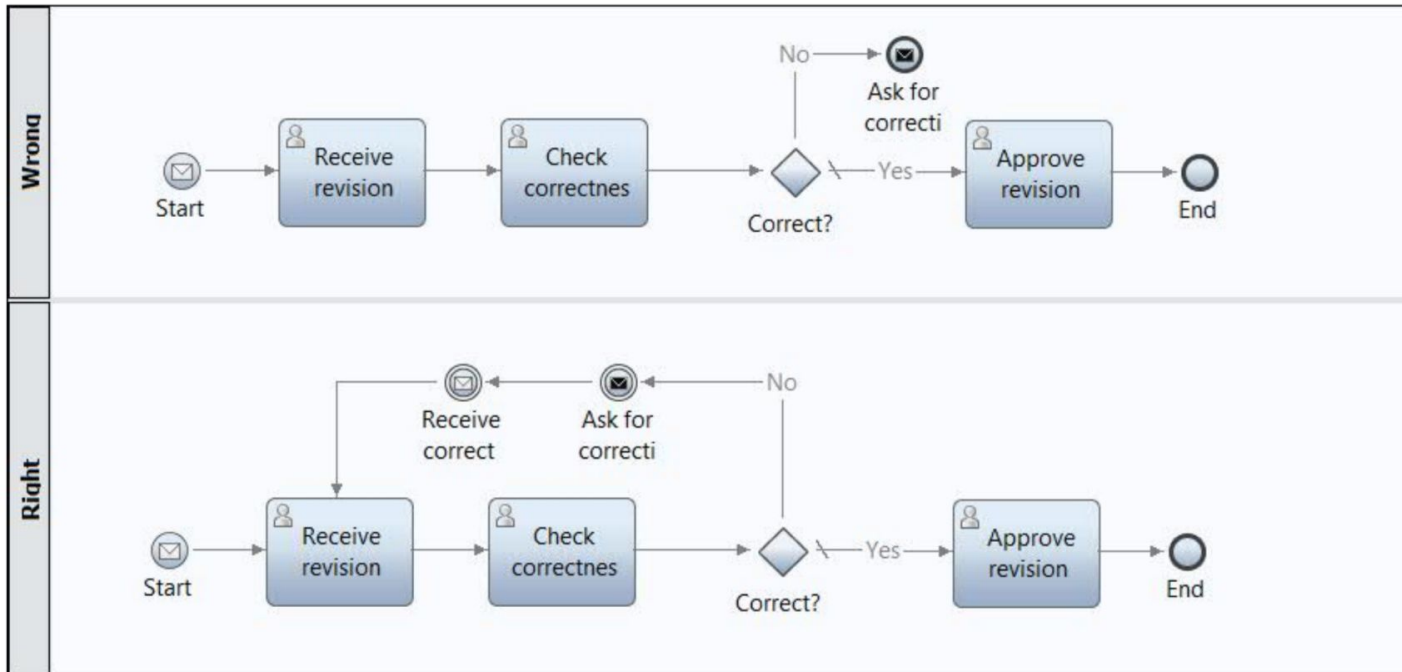
From abstract to runnable

Inappropriate end of (sub)process:
the process continues along the same path irrespective of a positive or negative result
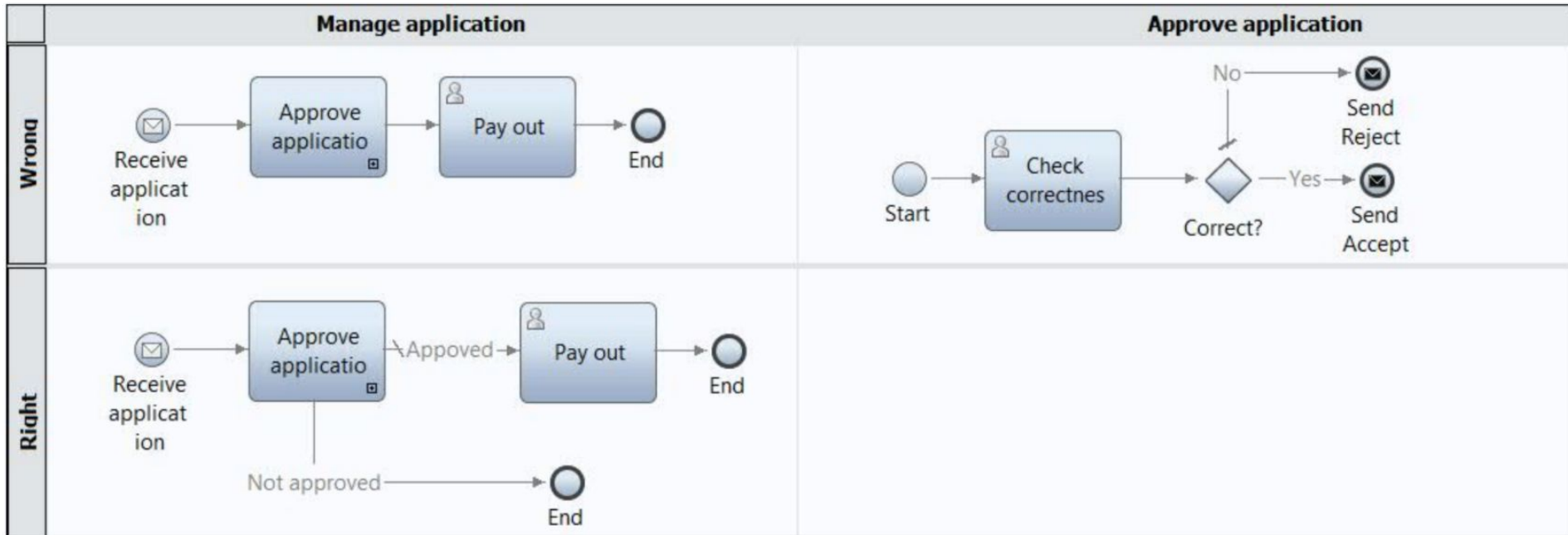
From abstract to runnable

Sunny day scenario
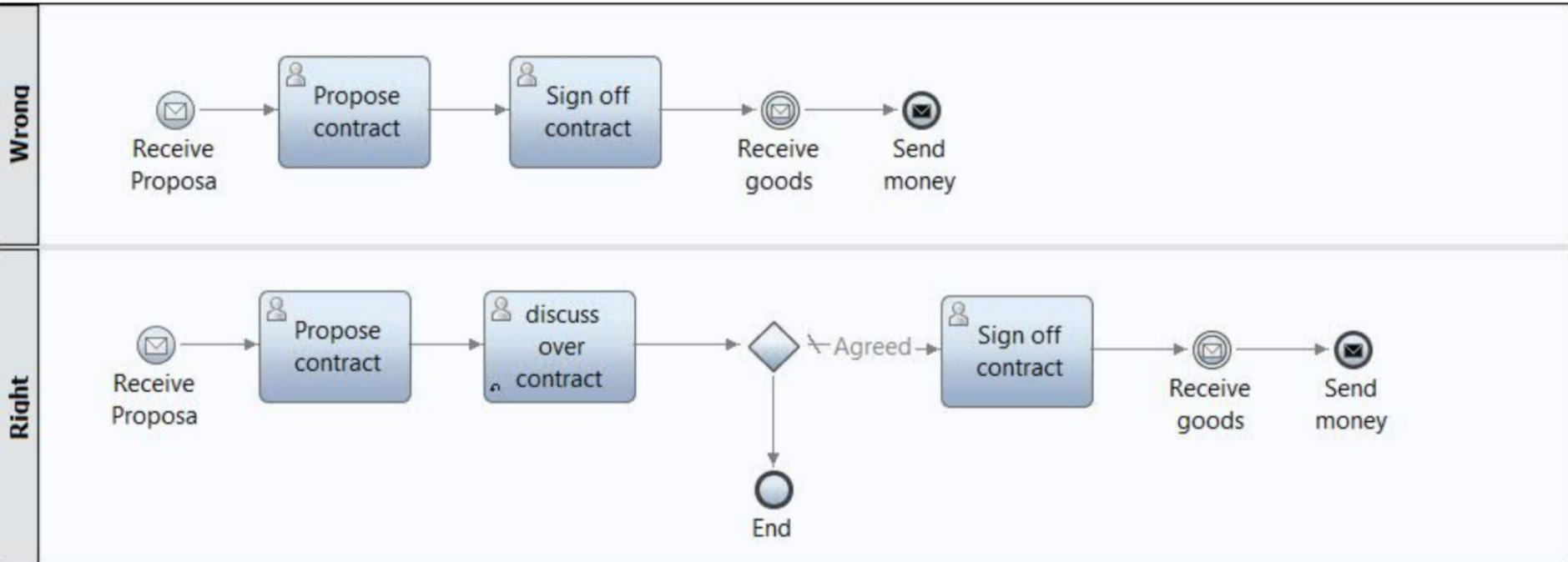
Process Redesign

- everything gets old even processes

- environment undergoes never-ending change

- processes should adapt to the change from time to time

- two ways how to do it

  - by revolution => design from scratch

  - by evolution => redesign the old one

Process Redesign

Evolution

- input to redesign can be

    - regular business process

    - undocumented, manual, ad-hoc process

- redesign is often about trade-offs

- measure and match the performance of AS-IS and TO-BE

- four parameters: Quality, Time, Flexibility, Cost

Process Redesign

Contact reduction:
reduce the number of contacts with customers and third parties

- the exchange of information with a customer is time-consuming
- each contact may introduces new errors
- possible risk of losing some valuable data
- Quality +/-, Time +, Flexibility +, Cost +/-

Process Redesign

Order types:
determine whether tasks are related to the same type of order and, if necessary, distinguish new business processes

- concerned with sub-flows that are not specific for the business process they are part of.
- may cause less effective management of this sub-flow
- result in more coordination problems between the business processes
- less possibilities for rearranging the process
- Quality -, Time +, Flexibility - , Cost +

Process Redesign

Task elimination:
eliminate unnecessary tasks from a business process

- task is considered unnecessary when it adds no value from a customer's point of view
- control tasks and redundant tasks in a business process are such cases
- Quality -, Time +, Flexibility + , Cost +

Process Redesign

Triage:
consider the division of a general task into two or more alternative tasks

- Goal is to design tasks that are better aligned with the capabilities of resources and the characteristics of the orders being processed
- each expert does what he knows best
- adds complexity thus less flexibility
- possible risk for quality from monotonous work
- Quality +/-, Time +, Flexibility - , Cost +

Process Redesign

Parallelism:
consider whether tasks may be executed in parallel

- putting tasks in parallel leads to reduced throughput time
- fights with a legacy from old hand to hand systems
- the management of business processes with concurrent behavior can become more complex
- Quality -, Time ++, Flexibility - , Cost -

Resources

- [Best practices in business process redesign](#)

- [BPMN 2.0 by Example](#)

Summary

- Best practise introduction

- Basic mistakes in process design

- Petri nets

- 7 guidelines for better models

- From abstract process to executable one

- Process redesign, pursuing the desired effect

Thank you!