

Hannover Fair 2024

# Using the SoW Methodology and Software to Model Service-Oriented Value Creation

Das Projekt Serviceorientierte Wertschöpfung (SoW) wird unter den Förderkennzeichen 02K20Z000 - 02K20Z006 durch das Bundesministerium für Bildung und Forschung gefördert und läuft vom 1. Januar 2022 bis 31. Dezember 2024.

Website: <https://www.serviceorientierte-wertschoepfung.de>



## Using the SoW Methodology and Software

### Use case “Feasibility of an XaaS business model”

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A medium-sized manufacturer of spinning machines, is toying with the idea of introducing a pay-per-use business model.

The company wonders whether such a business model is feasible and advantageous for them, and which new partners they might need.

The SoW modeling methodology should help answer these questions.

# Using the SoW Methodology and Software

## Starting point



Begin by brainstorming the factors that drive value for the stakeholders involved and determine what the modeling should be focused on.

Rather than trying to cover all questions with one big model, it is better to create several smaller models.

### Added value for customers is created when

- **Production stops are less frequent**
- Consistently high spinning quality is ensured
- Production is more efficient and conserves resources
- less capital is tied up
- ...

### Added value for the company is created when

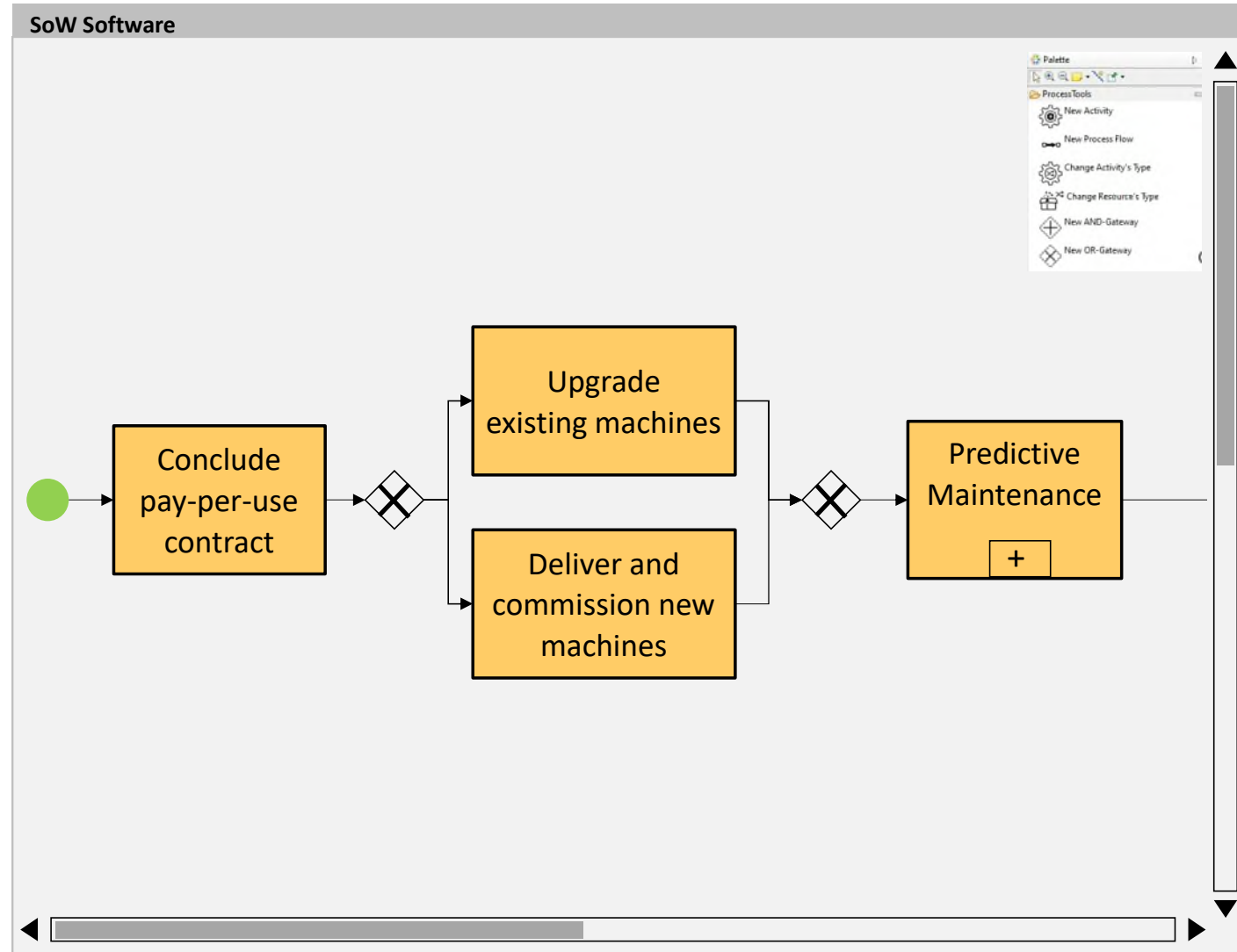
- the margins are higher in the long term
- New customers can be reached more easily
- Customers can be retained for longer
- Machine usage data can be used to improve the machines or to create new service offerings
- **The risk is manageable**
- ...

# SoW modeling

## Root Process Diagram

First describe the activities required to implement the new business model at a high level of abstraction

In particular, model activities that help answer the focused question

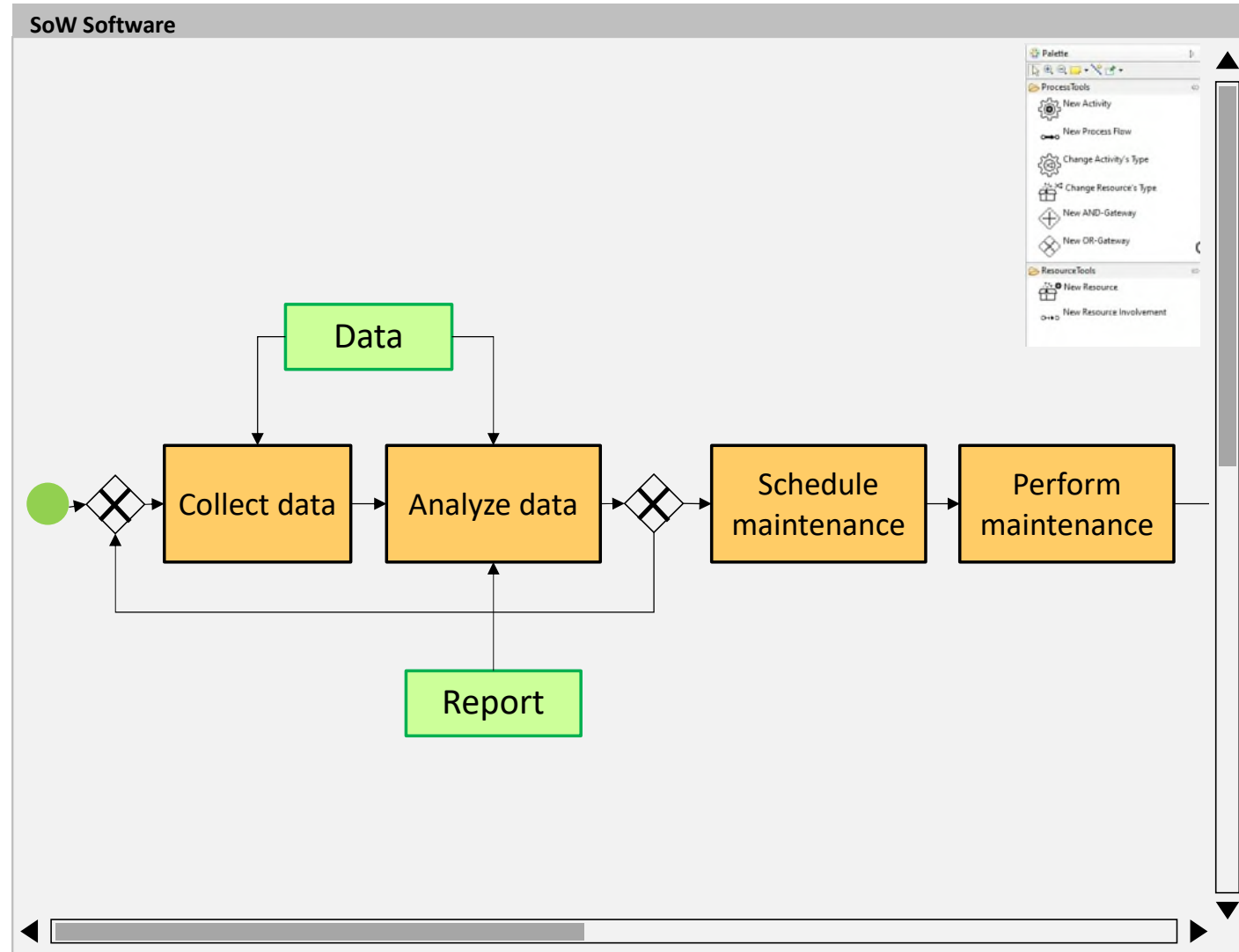


## SoW modeling

### Subprocess „Predictive Maintenance“

Then describe relevant  
sub-processes

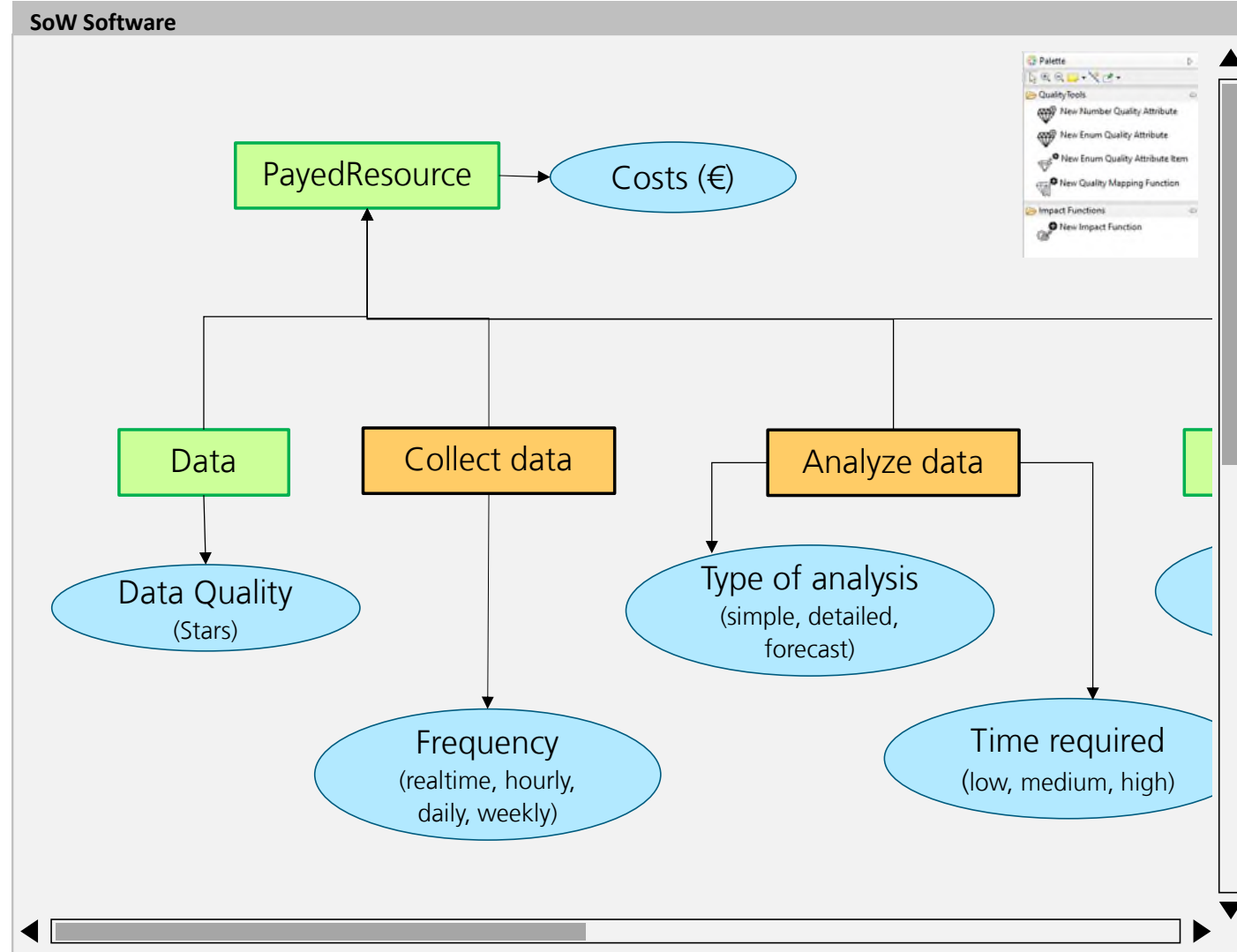
Specify the resources that  
are contributed or changed  
in activities



# SoW modeling Resource Type Diagram

Define quality attributes of  
resources and activities

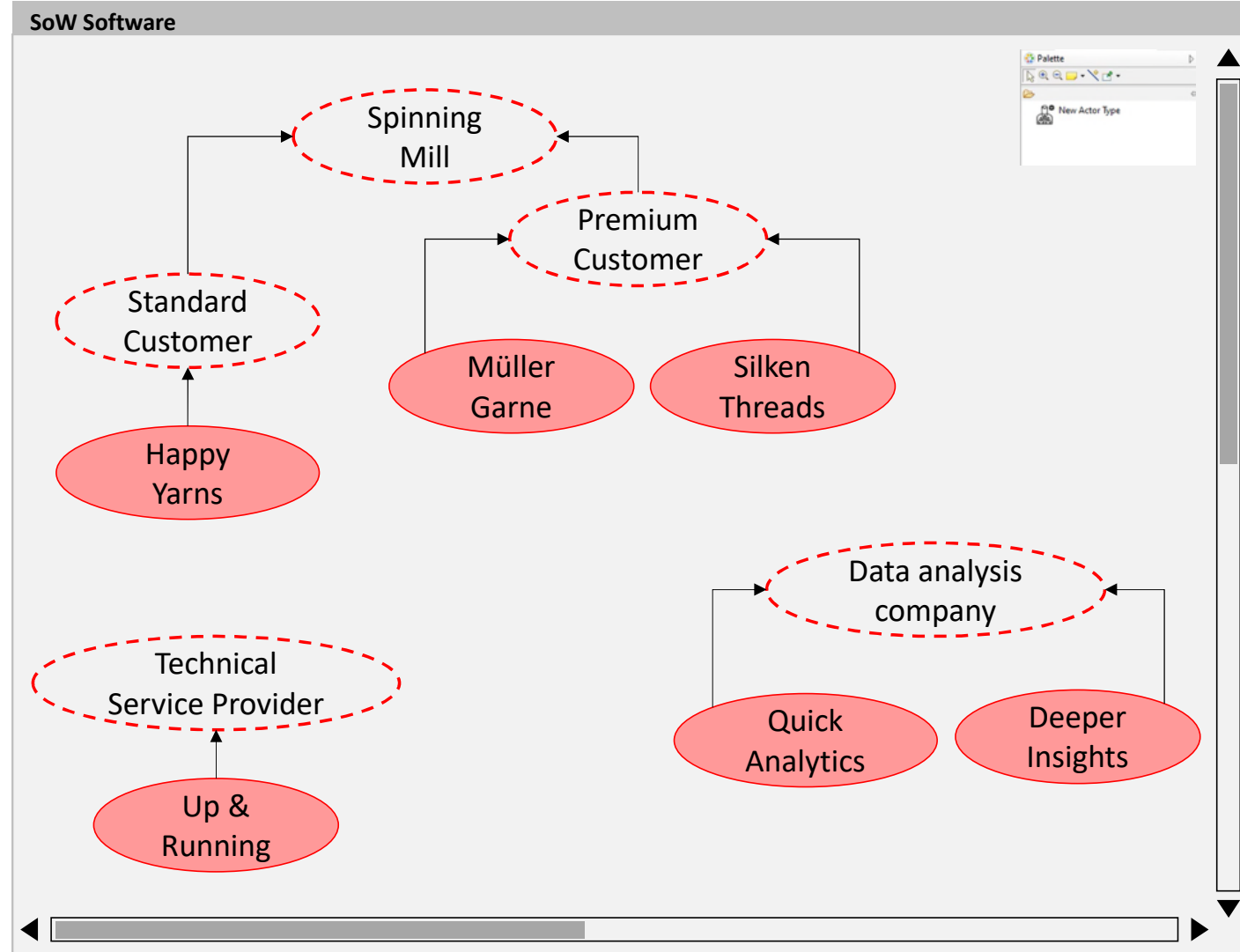
Add units of measure or  
quality gradations



# SoW modeling Actor Role Diagram

Specify the types of players that are involved in the value creation process

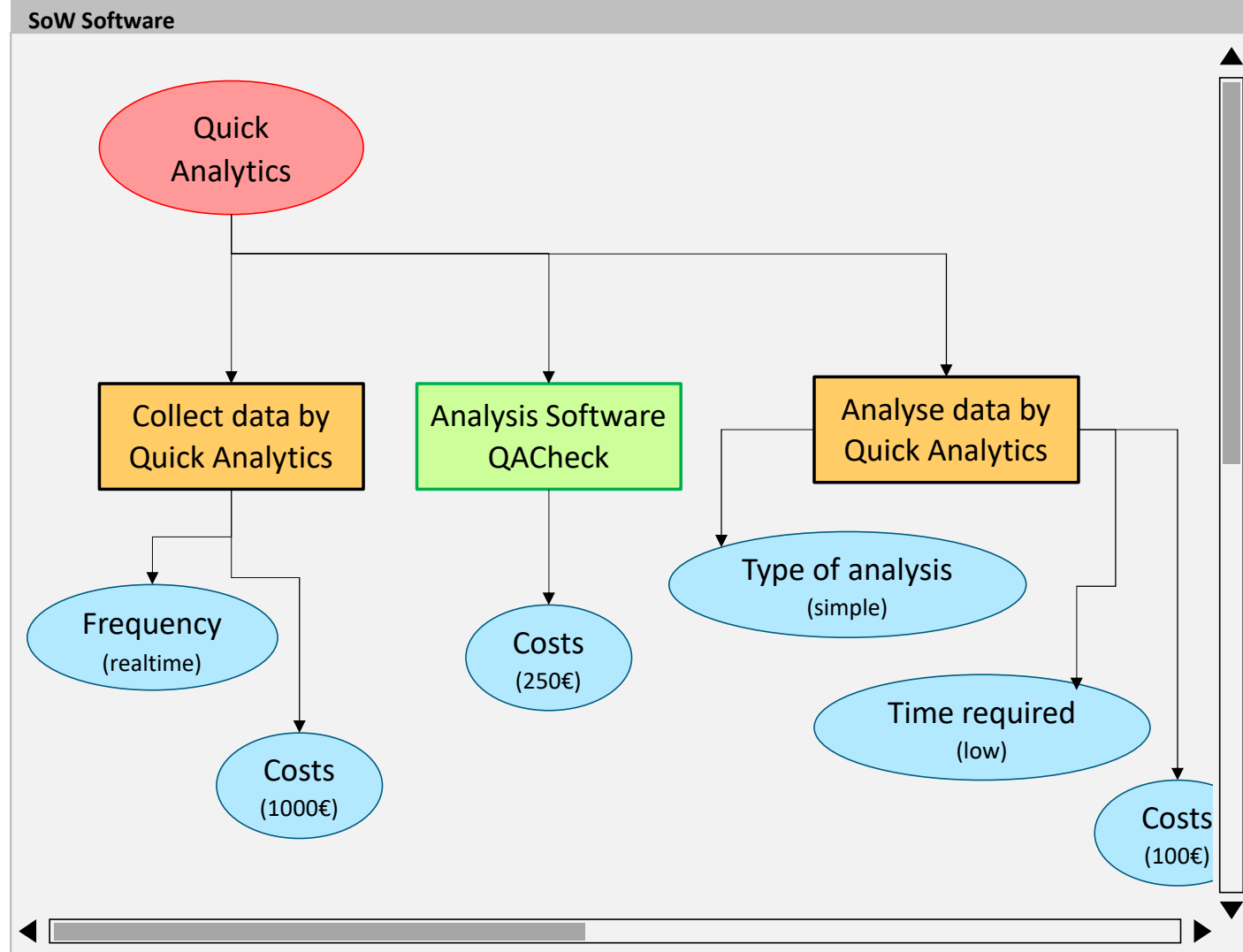
Assign specific actors to roles



## SoW modeling Actor Diagram „Quick Analytics“

Describe what activities an actor provides and what resources it uses.

Specify quality attribute values

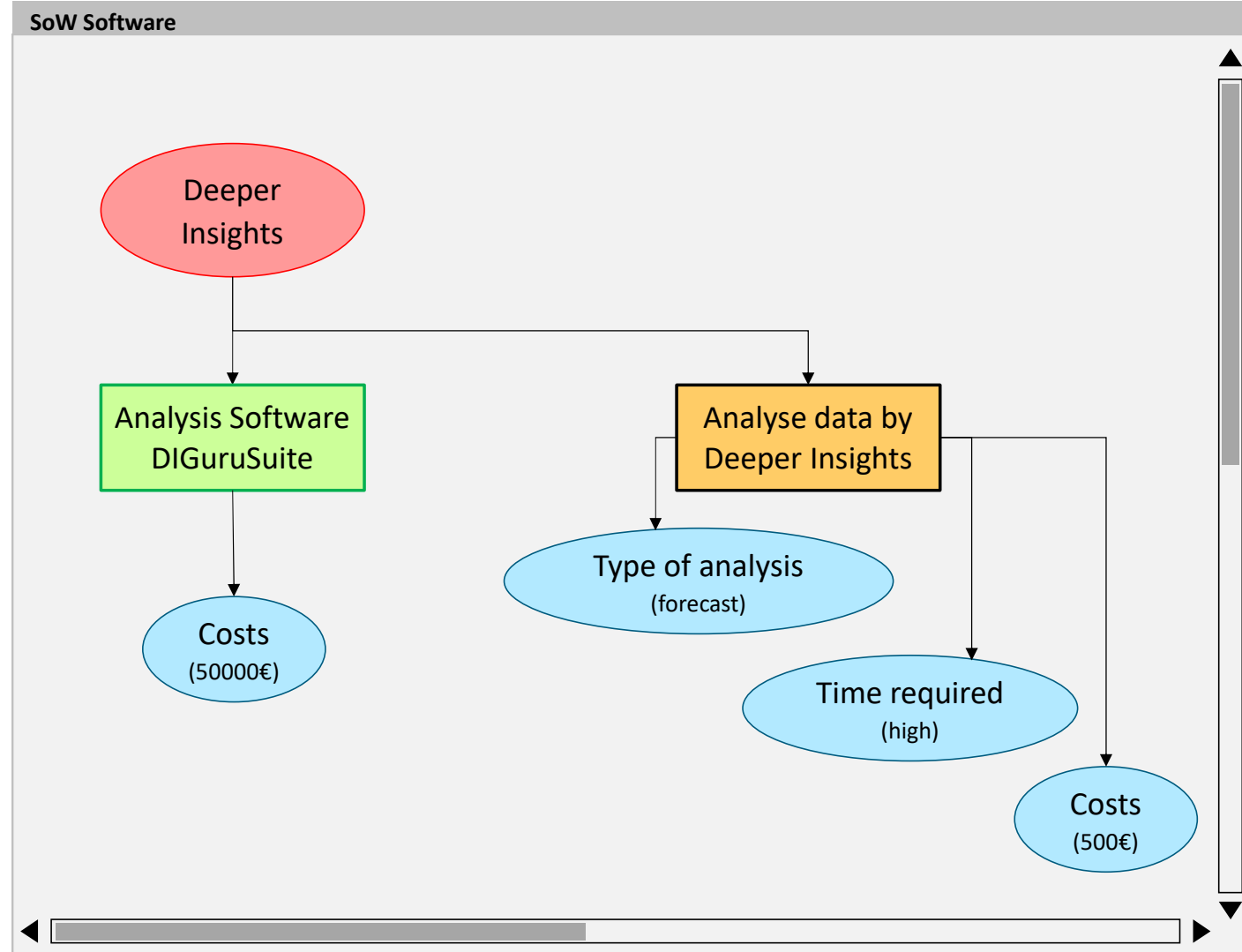




## SoW modeling

### Actor Diagram „Deeper Insights“

The actor diagrams show what actors have in common and how they differ from each other

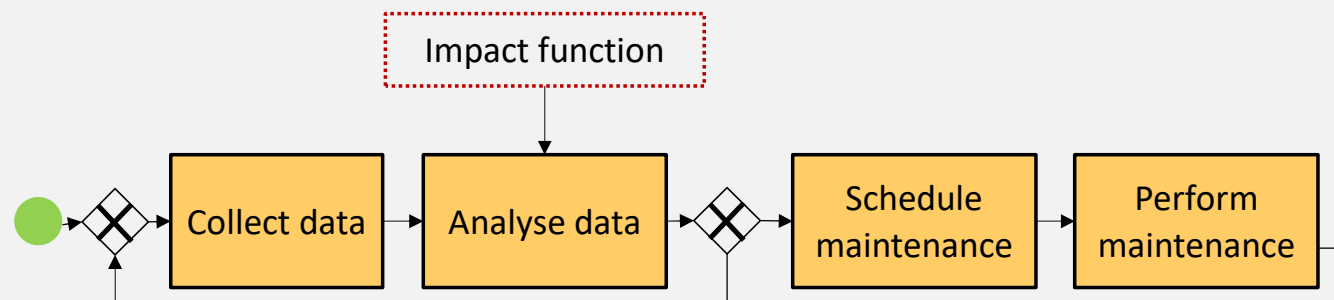


## SoW modeling Impact Function

Create small scripts that define how resources and subsequent activities change when an activity is performed

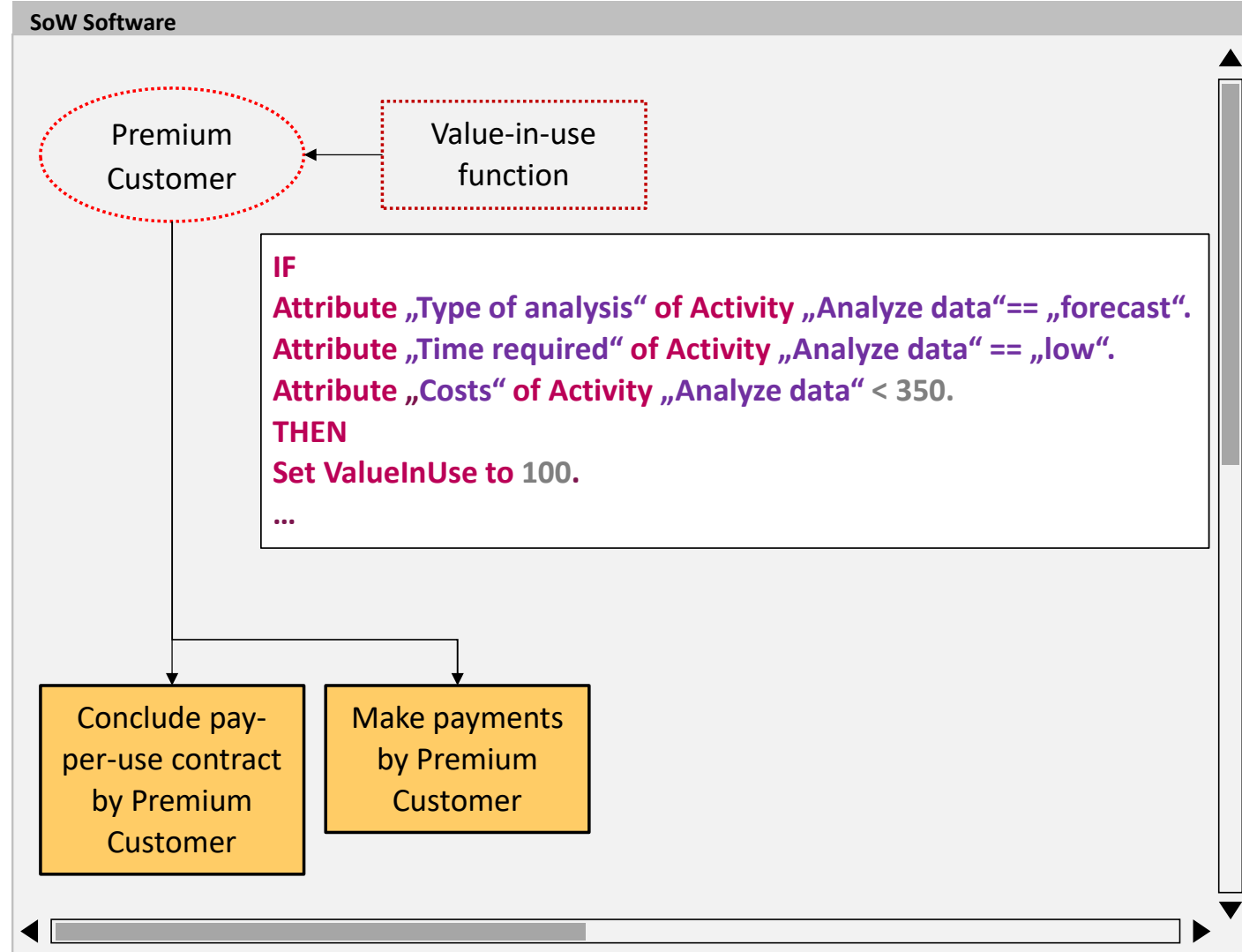
### SoW Software

```
IF
Actor „DeeperInsights“ performs Activity „Analyze data“
THEN
Set Attribute „Time required“ to „high“.
Set Attribute „Type of analysis“ to „forecast“.
Set Attribute „Costs [€]“ + 500.
.
IF
Actor „QuickAnalytics“ performs Activity „Analyze data“
THEN
Set Attribute „Time required“ to „low“.
...
```



## SoW modeling Value-in-use function

Create small scripts that determine the value added for roles or specific actors



## SoW modeling Simulation script

Create a script specifying the values to run the simulation with.

### SoW Software

**Run simulation of Process „Predictive Maintenance“ for 2 epochs.**

**Actor „Quick Analytics“ performs Activity „Collect data“.**

**Actor „Quick Analytics“ performs Activity „Analyze data“.**

**Actor „Quick Analytics“ provides Resource „Analysis Software“ through ResourceInstance „QACheck“.**

**Actor „Up & Running“ performs Activity „Schedule Maintenance“.**

**Actor „Up & Running“ provides Resource „Staff Planning Tool“ Through ResourceInstance „Plan.AI“.**

...

# SoW modeling Simulation results

Analyze simulation results

The report reveals which  
players and activities  
contribute the most to value  
creation

SoW Software

Automatisches Speichern qualityAttributeAndValueInUseValue... • Auf "diesem PC" gespeichert

Datei Start Einfügen Zeichnen Seitenlayout Formeln Daten Überprüfen Ansicht Automatisieren Hilfe Kofax PDF

Calibri 11 A<sup>+</sup> A<sup>-</sup> Textumbruch Standard

F K U Verbinden und zentrieren % 000

Zwischenablage Schriftart Ausrichtung Zahl Zellen

B2 Root Process.0

Epoch	Step count	C	D	E	F	G	H	I	J	K	L	M	N	O	P
2	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
3	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
4	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
5	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
6	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
7	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
8	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
9	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
10	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
11	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
12	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
13	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
14	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
15	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
16	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90
17	0 Root Process	2492,000000	100	100	53,333333	10	300	200	300	400	90	200	200	400	90

# Kontakt

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