The supplier produces und delivers raw material and sends it to the manufacturers. They manufacture the material to products, which are then sent to the Assembler. The Assembler is responsible for merging both intermediate products and building the final product. In our specific case we decided to build our Collaboration Scenario in the sector of car producing. The supplier's raw material is aluminum, which are delivered in two different states. One of our Manufacturer manufactures the vehicle's body and the other one manufactures the engine block. Our global goals (benefits) are:
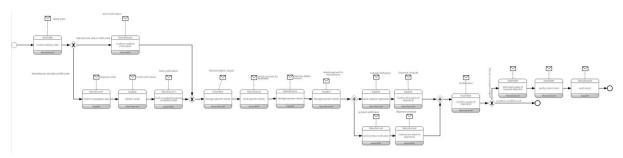
- improve supply chain (time) of all team members by 5%
- increase productivity, enter new markets in Asia to increase market share
- reduce global costs of all team members by 4%

My main Manufacturer goals are:

- reduce producing time by 10%
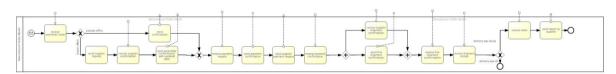- reduce administrative costs by 5%

In a group discussion we derived the Choreography Model from the provided text in the exercise paper. The three extended required tasks, which are unique in our solution is a claim process, where the assembler checks the quality of the delivery and then decides to keep it or send it back. We assumed that in case of a bad delivery it's never the manufacturer's fault. So the manufacturer always sends a report to the supplier. With this additional feature we included all of our four roles.

Choreography Model:

From the discussed Choreography Model each team member derived its own Public Model.
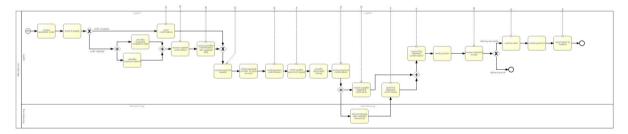
Public Model:

When we had three different Public Models (both Manufacturer are required to have the same public tasks) each team member derived its own Private Model.

Private Model:

My private model is divided into two swim lanes, which are Logistics and Manufacturing. Logistics is responsible for administrative tasks and Manufacturing is responsible for producing products.

The used resources are either machines, when tasks are automatically working or humans, when tasks require human work. Machine tasks are, for example receiving or sending requests or confirmations. Human work is more expensive than machine tasks and contains tasks like producing products, calculate, if projects are feasible or sending shipments. The following table describes all tasks from my private model with associated costs, time per hours, the number of used resources and the reliability. I assumed that automatic tasks done by machines have a higher reliability than tasks done by humans.

Taskname	Included workers	Cost	Time (hours)	ressource	reliability	Total
receive assembler order	machine	10	0,01	1	0,9	€ 0,11
check if doable	human, machine	20	2	3	0,78	€ 153,85
send confirmation	machine	10	0,01	1	0,8	€ 0,13
calculate projected completion date	human, machine	30	2	2	0,8	€ 150,00
calculate required material	human, machine	30	1	2	0,8	€ 75,00
send supplier request	machine	10	0,01	1	0,8	€ 0,13
receive supplier confirmation	machine	10	0,01	1	0,9	€ 0,11
send assembler conformation with updated date	machine	10	0,01	1	0,9	€ 0,11
receive payment request	machine	10	0,01	1	0,9	€ 0,11
check expected transfer on bank account	human, machine	15	0,5	2	0,7	€ 21,43
send payment confirmation	machine	10	0,01	1	0,9	€ 0,11
send supplier payment request	machine	10	0,01	1	0,9	€ 0,11
transfer demanded money	human, machine	15	0,5	1	0,76	€ 9,87
receive payment confirmation	machine	10	0,01	1	0,9	€ 0,11
receive supplier shipment notification	machine	10	0,01	1	0,9	€ 0,11
start producing with available ressources	human	20	4	4	0,8	€ 400,00
send first shipment confirmation	machine	10	0,01	1	0,9	€ 0,11
receive first shipment conformation	machine	10	0,01	1	0,9	€ 0,11
send products	human	15	1	1	0,8	€ 18,75
receive shipment receipt	machine	10	0,01	1	0,9	€ 0,11
receive claim	machine	10	0,01	1	0,9	€ 0,11
receive products	human	15	0,5	1	0,8	€ 9,38
send report to Supplier	human	15	0,5	1	0,76	€ 9,87
						849,72

Choreography Model

Public Model

Manufacturer Public Model

receive assembler order

[accept offer]

[reject offer]

send supplier request

receive supplier confirmation

send assembler conformation with updated date

send confirmation

receive payment request

send payment confirmation

send supplier payment request

receive payment confirmation

receive supplier shipment confirmation

send first shipment confirmation

receive first shipment conformation

receive shipment receipt

delivery was faulty

delivery was ok

receive claim

send report to supplier

Manufacturer Public Model

Private Model

Manufacturer

Logistic

- receive assembler order
- check if doable
- p(e)=0,7 order accepted
- p(f)=0,3 order rejected
- calculate projected completion date
- calculate required material
- send supplier request
- receive supplier confirmation
- send assembler conformation with updated date
- send confirmation
- receive payment request
- check expected transfer on bank account
- send payment confirmation
- send supplier payment request
- transfer demanded money
- receive payment confirmation
- receive supplier shipment notification
- send first shipment confirmation
- receive first shipment conformation
- send products
- receive shipment receipt
- p(x)=0,3 delivery was faulty
- p(y)=0,7 delivery was ok
- receive claim
- receive products
- send report to Supplier

Manufacturing

- start producing with available ressources