

# Towards Competence-based Enterprise Restructuring Using Ontologies

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# Background of the research

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- Restructuring within National Research University – Higher School of Economics
- Recent staffing issues within European contact centre of multinational corporation

*How to do enterprise restructuring taking competences into account?*

# Definition

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Competence is a specialized system of individual or collective abilities or skills that are necessary to perform a particular action.

VS

Competence is the ability of a subject to perform particular P-acts as well as the corresponding C-acts.

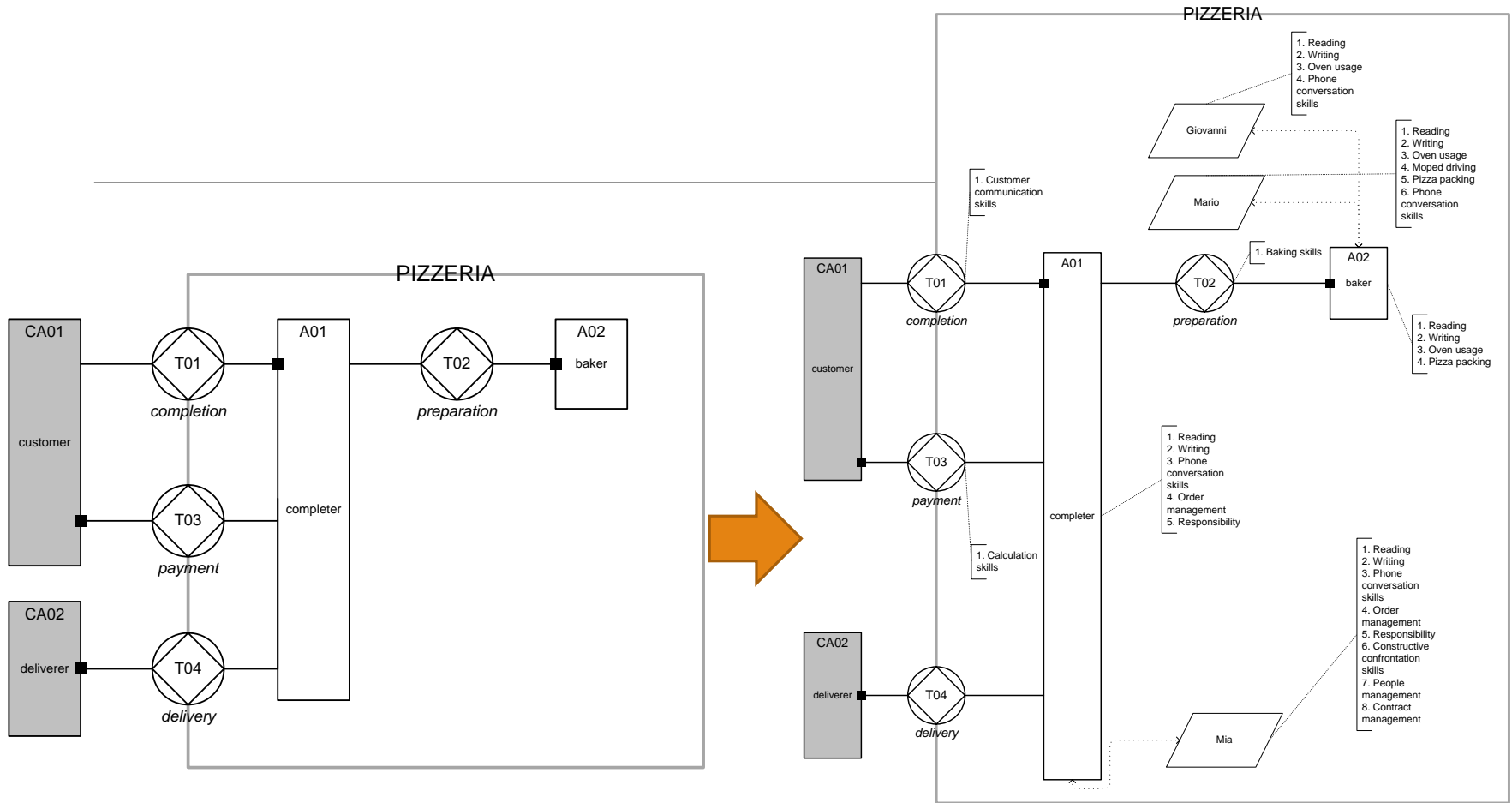
# Solution

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*Enhance DEMO, which is used during enterprise restructuring, by adding competences to DEMO's ATD in order to keep track of competences during enterprise restructuring.*

We are adding

- competence requirements for transaction (implementation independent),
  - competence requirements for actor role (implementation dependent),
  - actors (implementation dependent),
  - competences of actors (implementation dependent),
- to ATD and call it Ontological Competence Map (OCM).



Example of the OCM

# Solution

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Step 1. Create ontological model of the current state of enterprise using DEMO.

Step 2. Based on the Actor Transaction Diagram, create Ontological Competence Map of the current state of the enterprise.

Step 3. Create ontological model of the planned state of the enterprise after restructuring using DEMO.

Step 4. Based on the Actor Transaction Diagram, create Ontological Competence Map of the planned state of the enterprise after restructuring.

Step 5. Compare OCMs produced on steps 2 and 4.

# Solution

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Step 6. Analyze OCM produced on step 4 with the information obtained on step 5

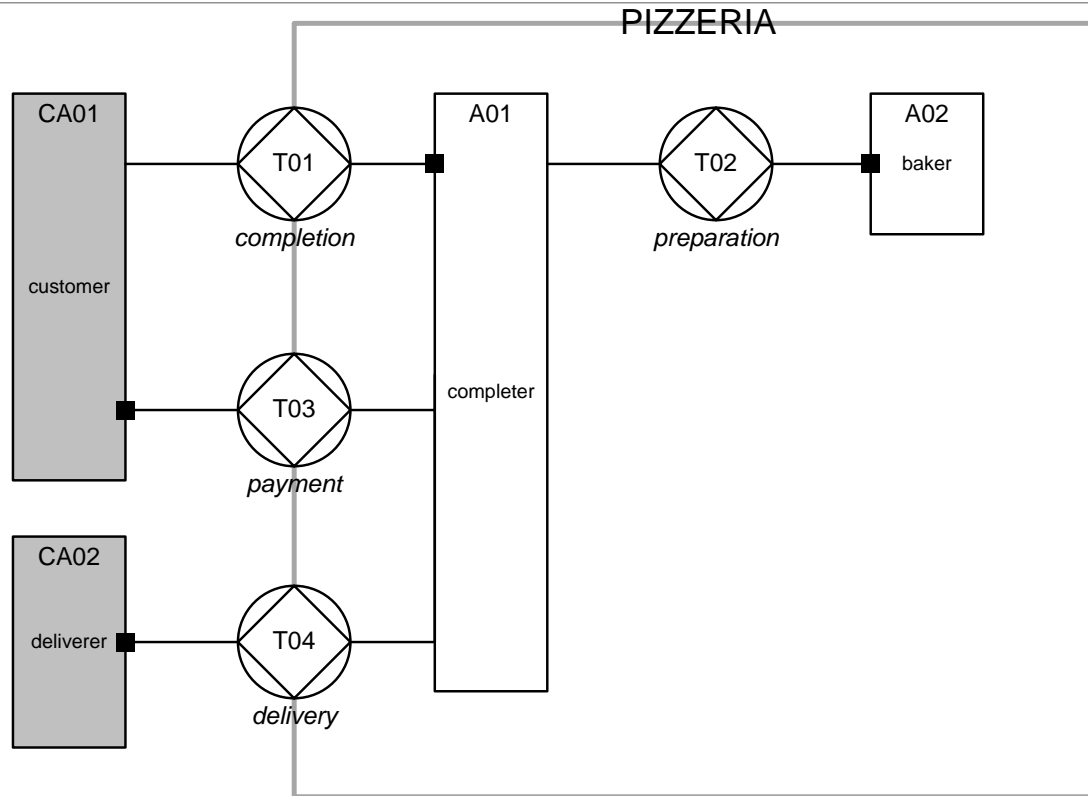
Step 7. Reassign employees between actor roles based on their individual competences in order to fulfil implementation competence requirements in the most optimal way, where possible.

Step 8. Based on the OCM produced on step 7, finalize number of people to be hired and competence requirements for them. Produce final OCM for the planned restructuring.

Step 9. Hire new employees based on the requirements produced on step 8 and assign them to the actor roles as per the final OCM.

Step 10. Produce OCM of the state of the enterprise after restructuring ends to validate that no competence gaps exist. If competence gaps exist, proceed with additional employee hiring or employees' trainings to remove the gaps.

# Pizzeria case

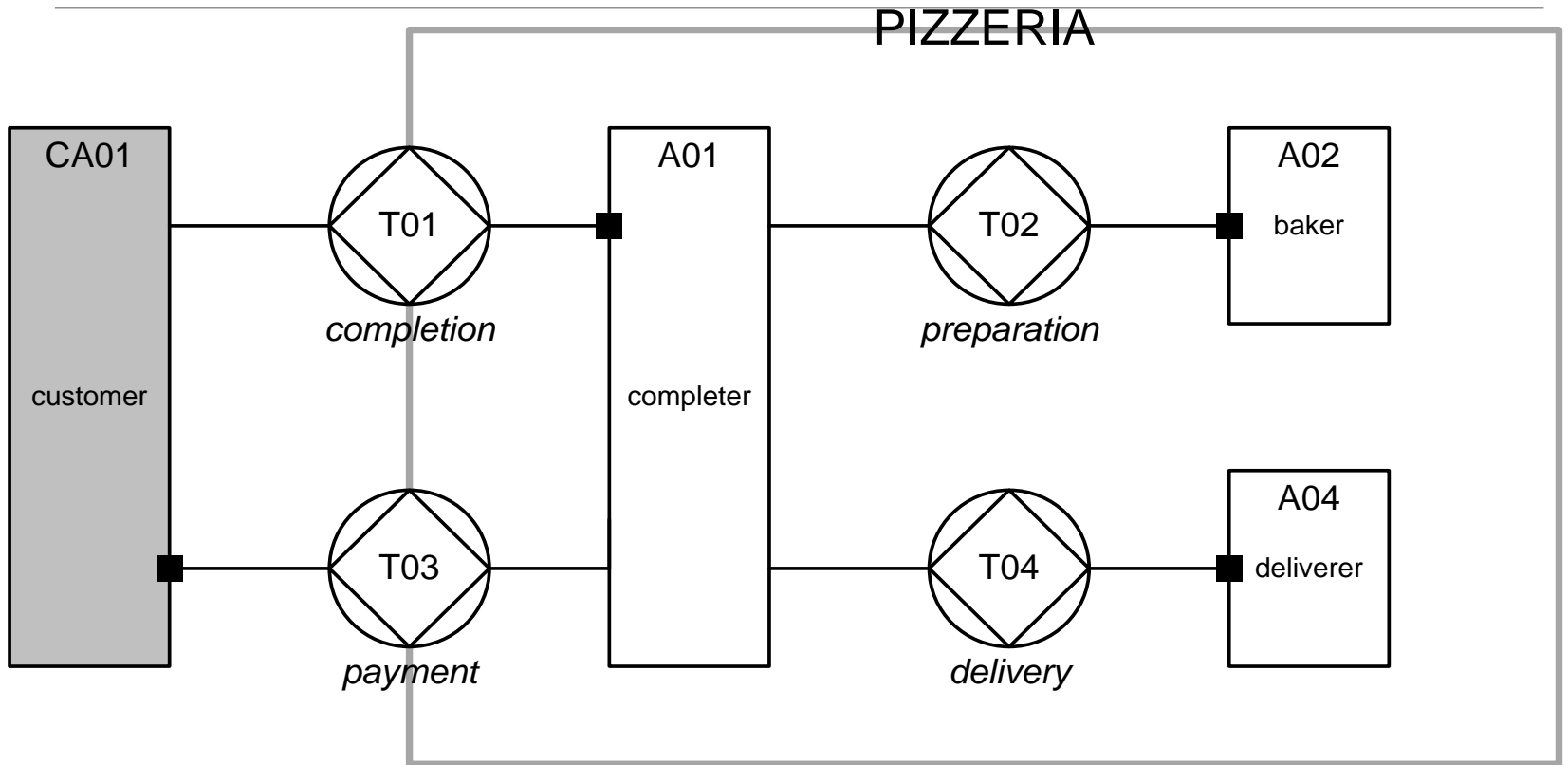


Original ATD of the Pizzeria, 2<sup>nd</sup> phase

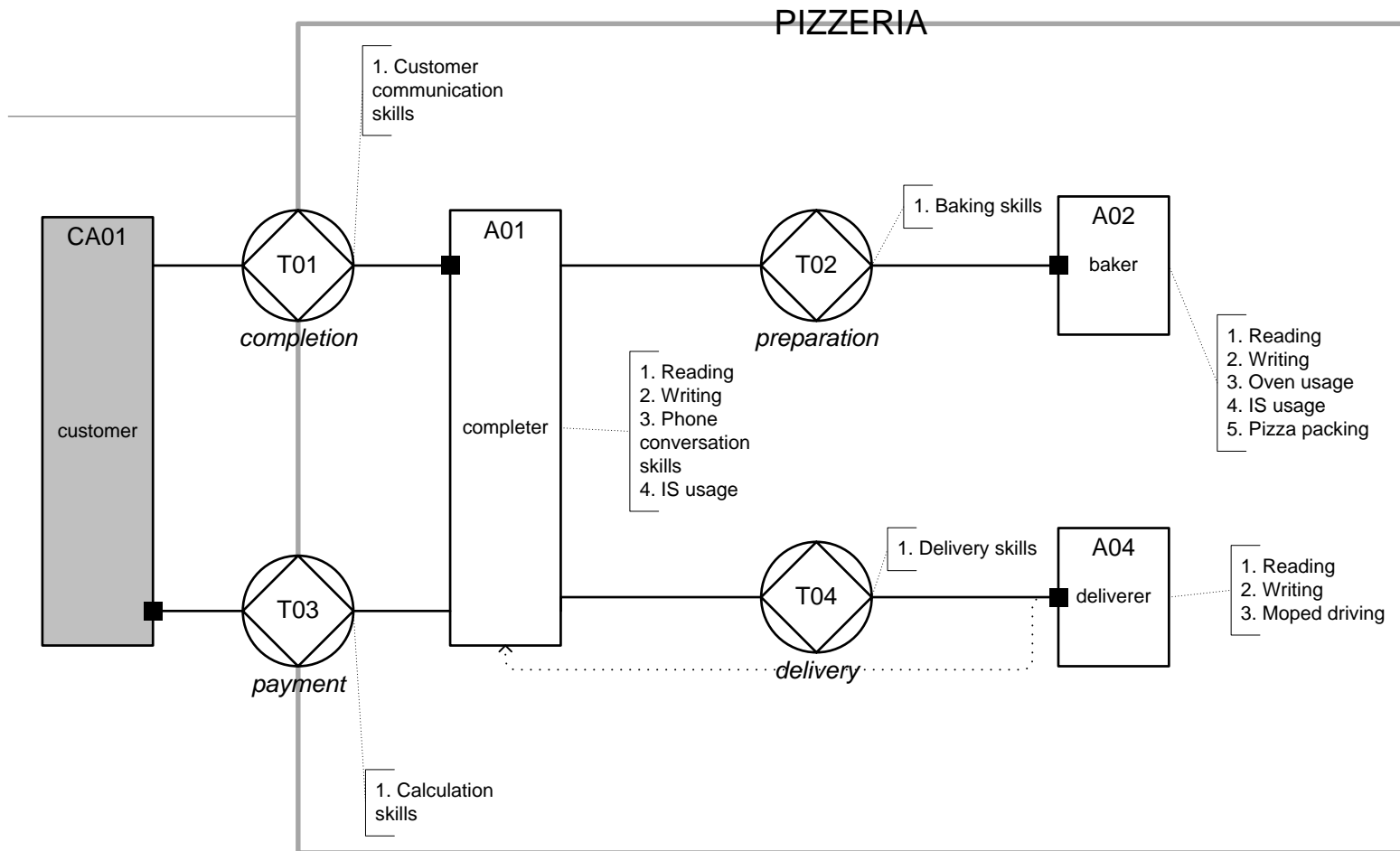
*J. Dietz. Enterprise Ontology: Theory and Methodology.*



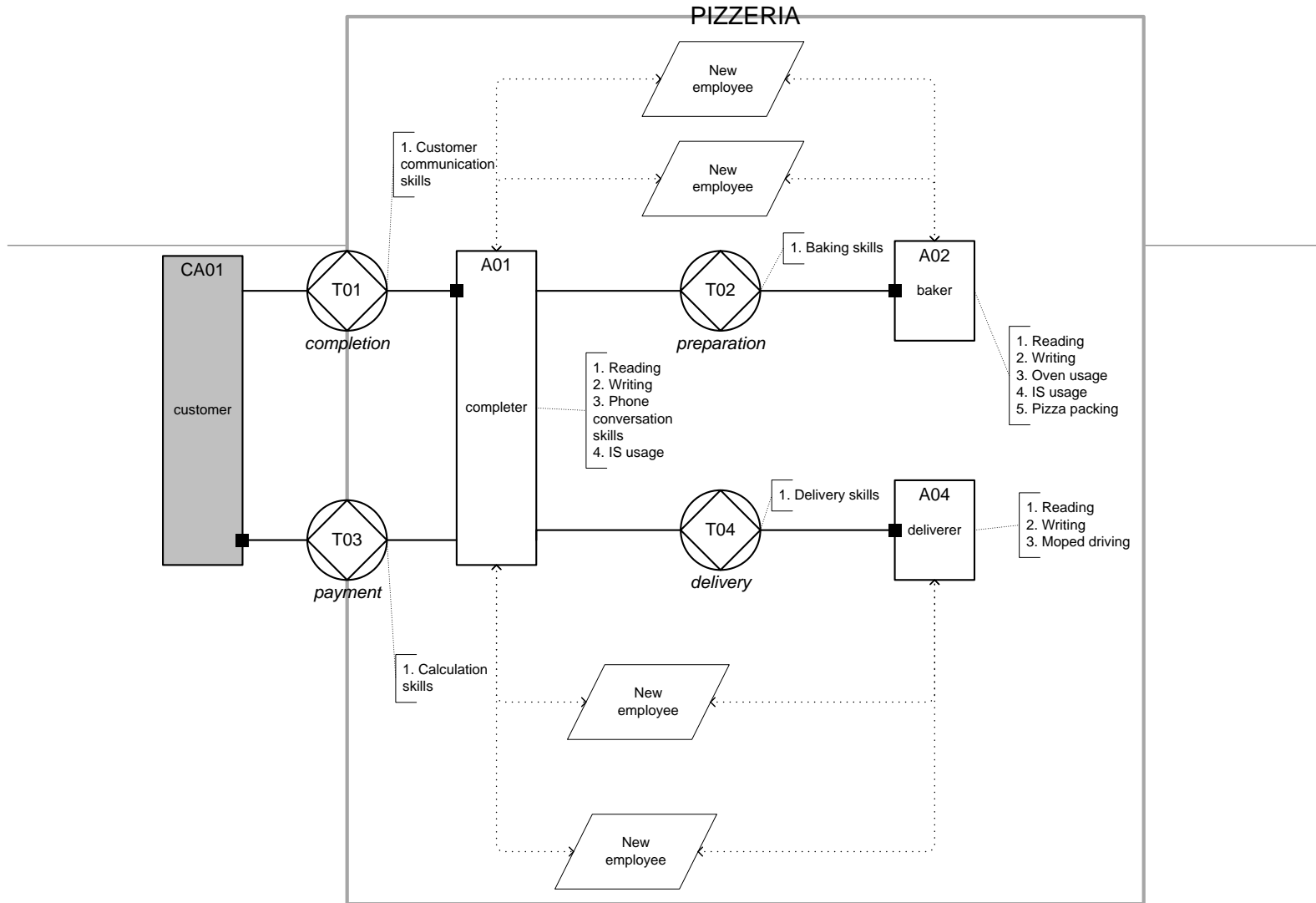




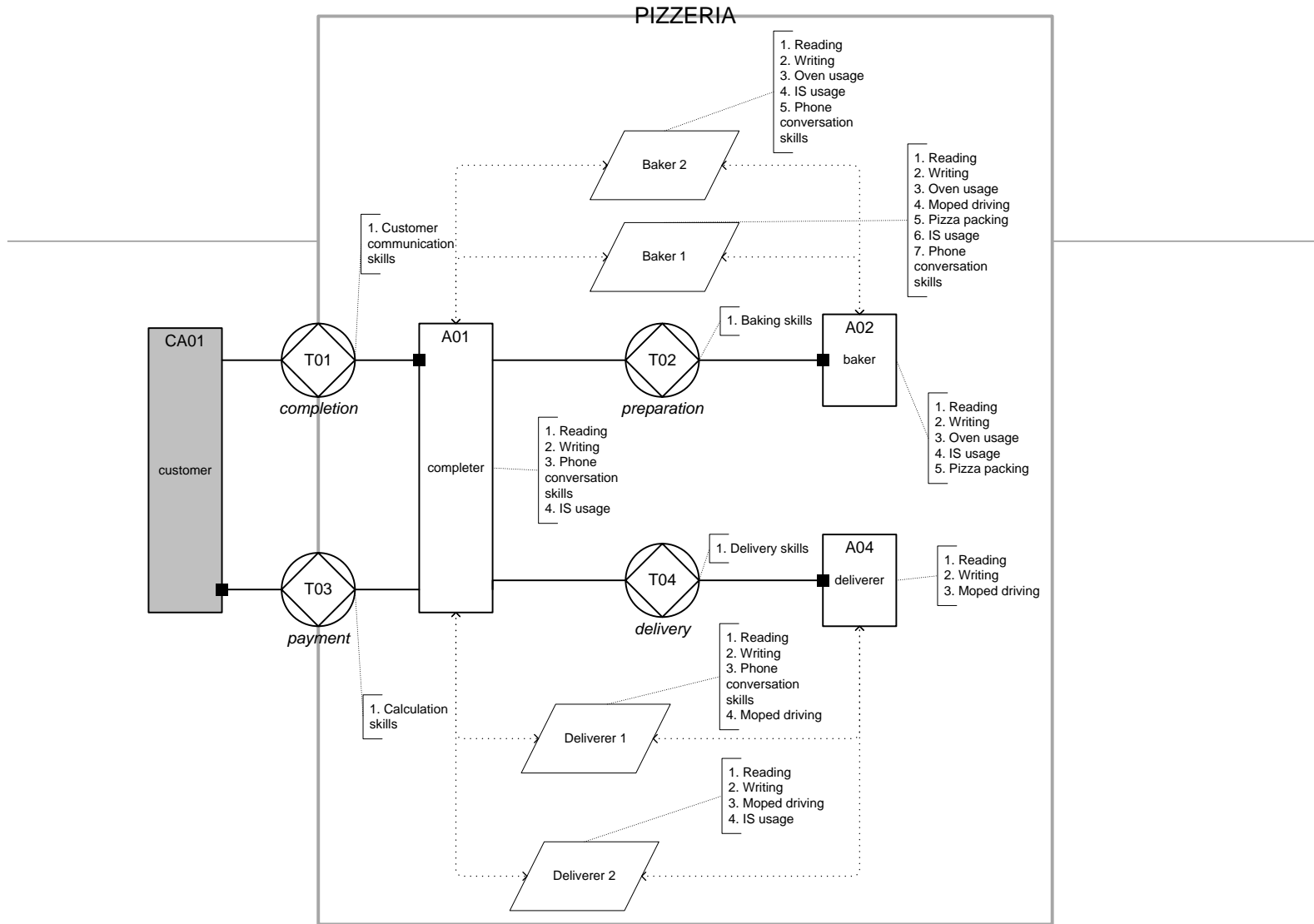
Planned ATD of the Pizzeria, 3rd phase



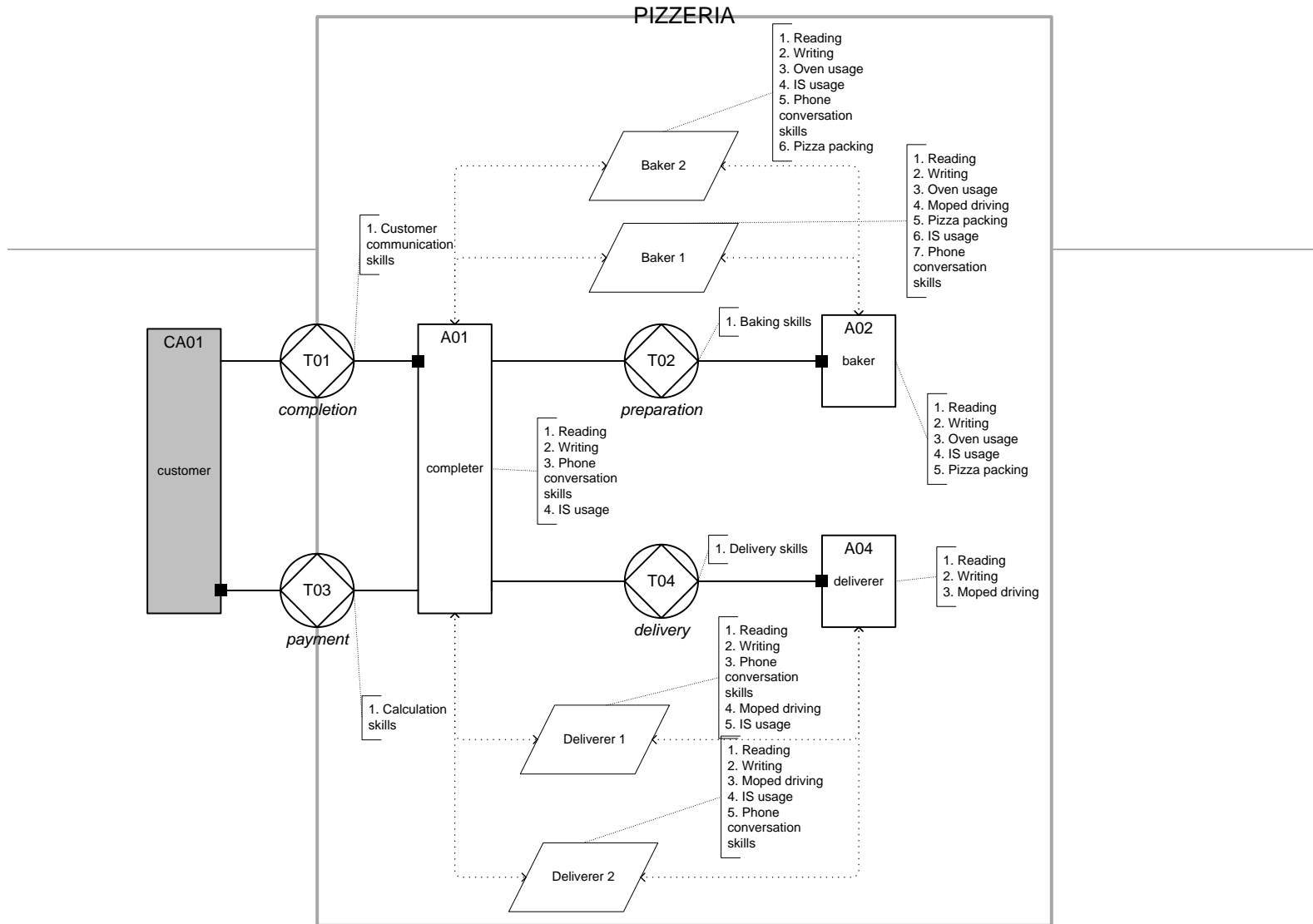
OCM of the planned Pizzeria structure, 3rd phase



Final OCM of the planned Pizzeria structure, 3rd phase



OCM of the Pizzeria, 3rd phase



Desired OCM of the Pizzeria after employee trainings completed

# Open questions

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How to retrieve the set of competences which an individual possesses?

How to model individual competences in a way appropriate for further automated analysis?

How to automate an analysis?