



Understanding human resource flows with system dynamics

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The case company



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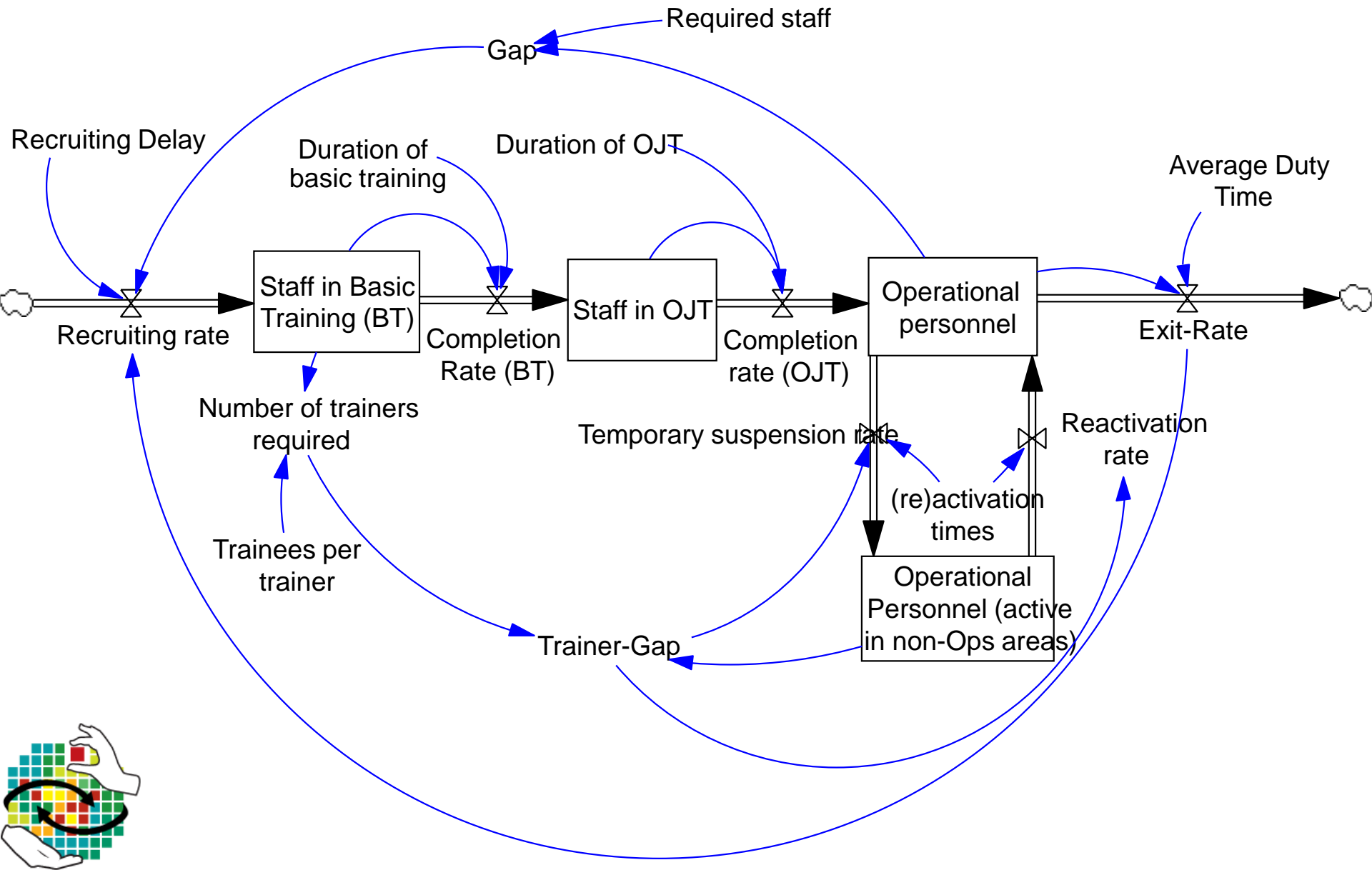
Andreas Größler and Alexander Zock (2010): Supporting Long-term Workforce Planning with a Dynamic Aging Chain Model – a case study from the service industry, *Human Resource Management* **49**(5): 829–848.



Goals of modelling and simulation project:

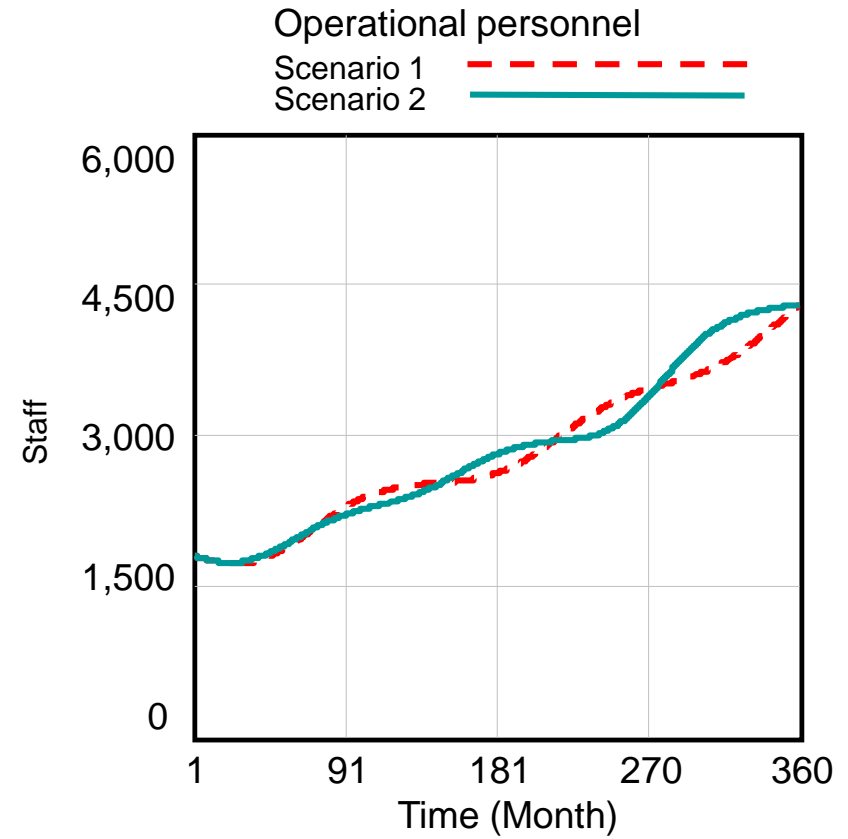
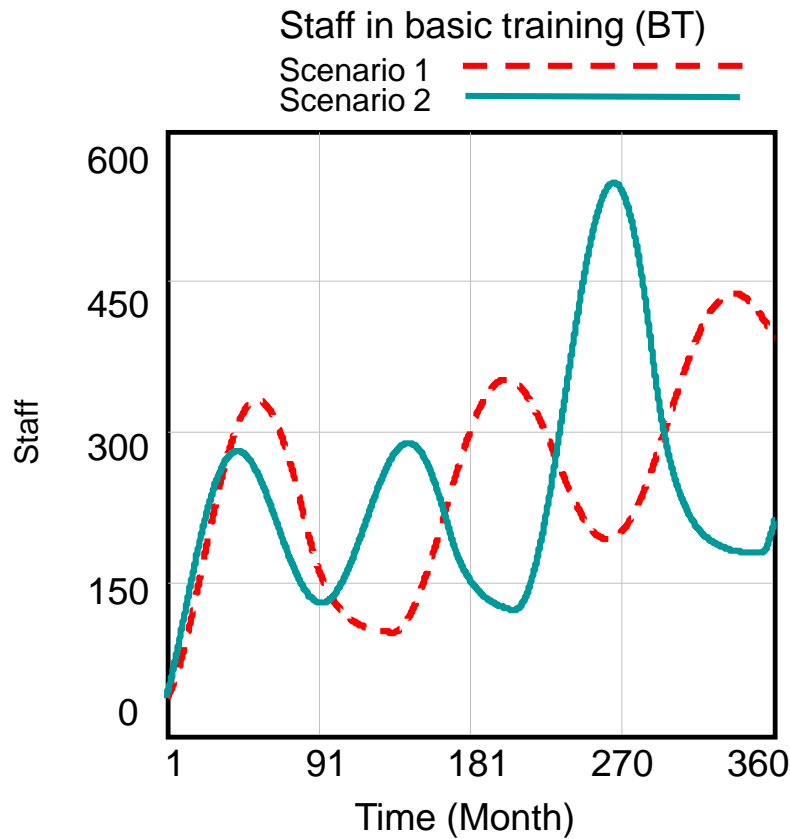
- Conduct a **structural analysis** of the existing long-term personnel planning process for air traffic controllers;
- provide a **dynamic analysis** of the existing planning policies;
- construct a **scenario-tool** to improve the existing planning policies as well as the established risk management approach accompanying the existing processes.





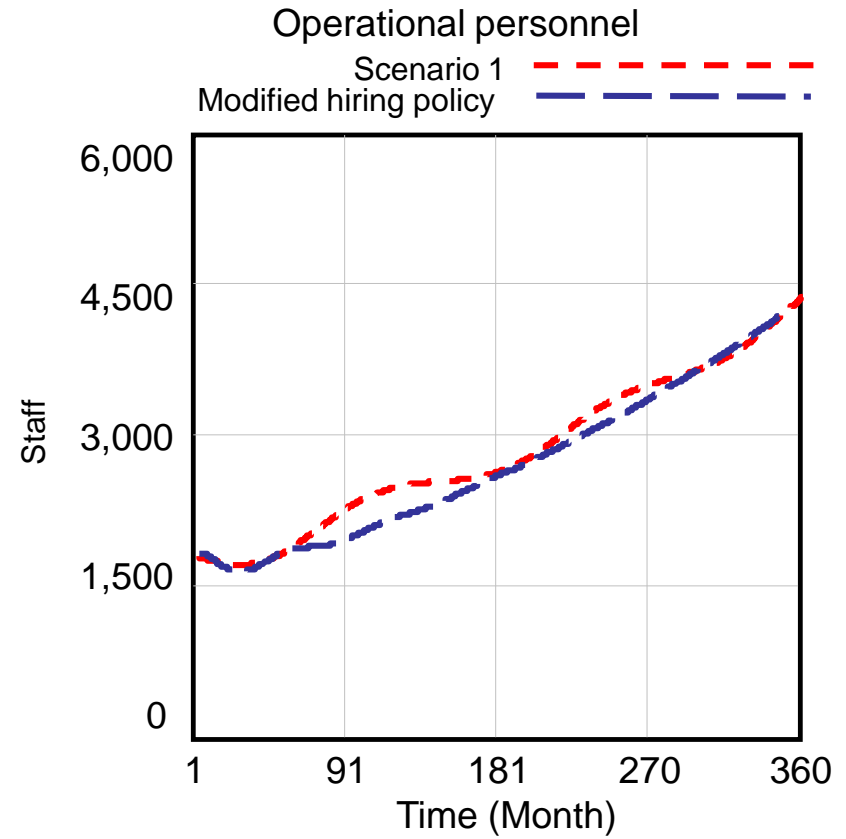
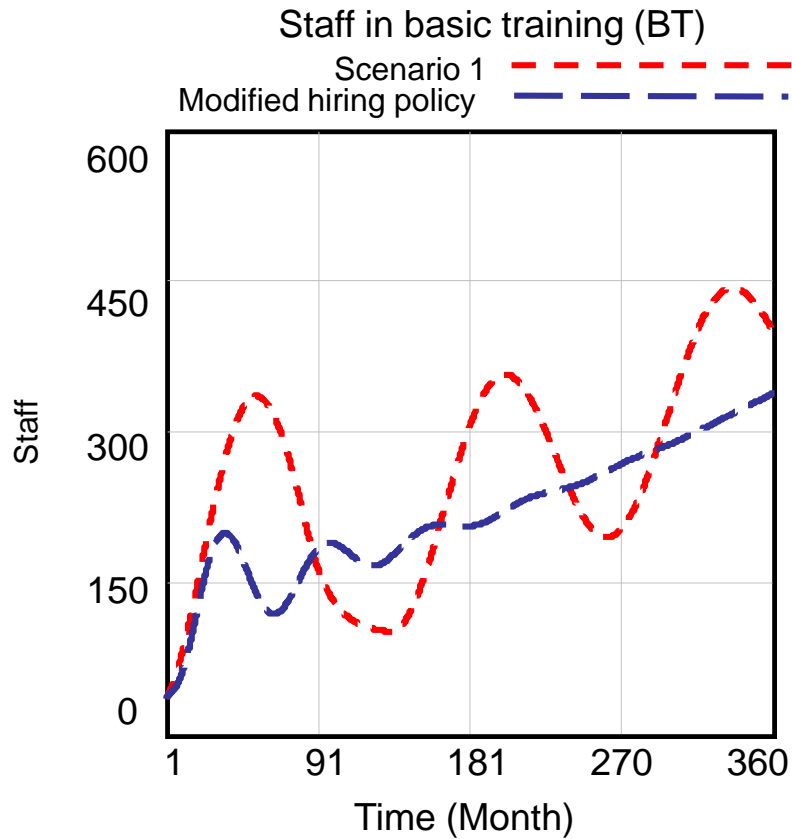


Oscillations are endogenously generated.



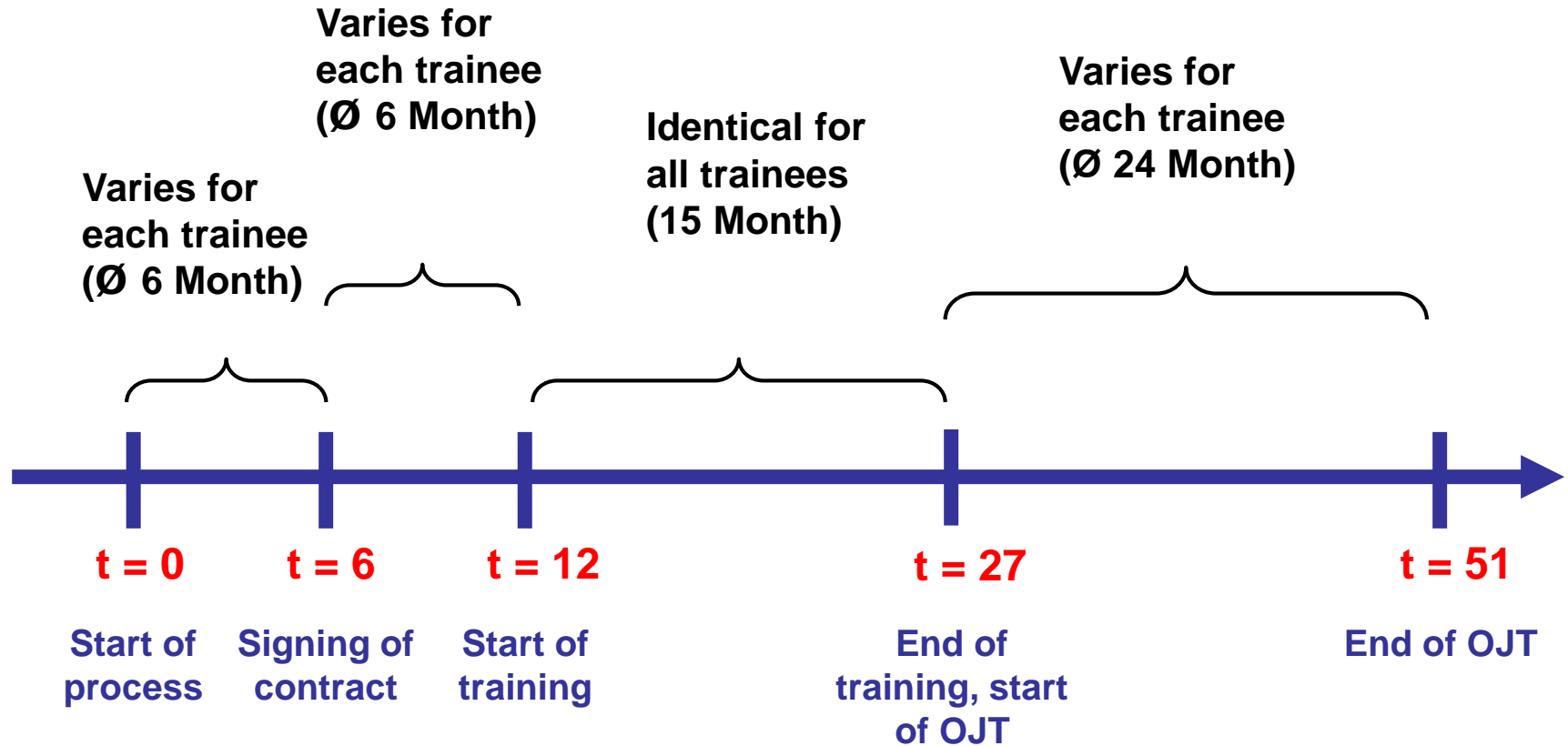


Consideration of supply line helps to reduce oscillations.





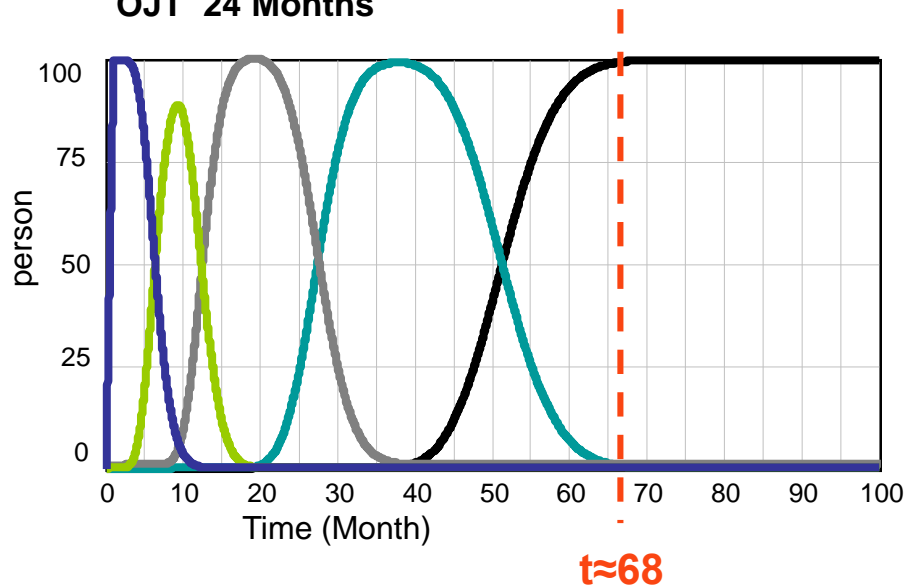
There exist substantial time lags in the training process.



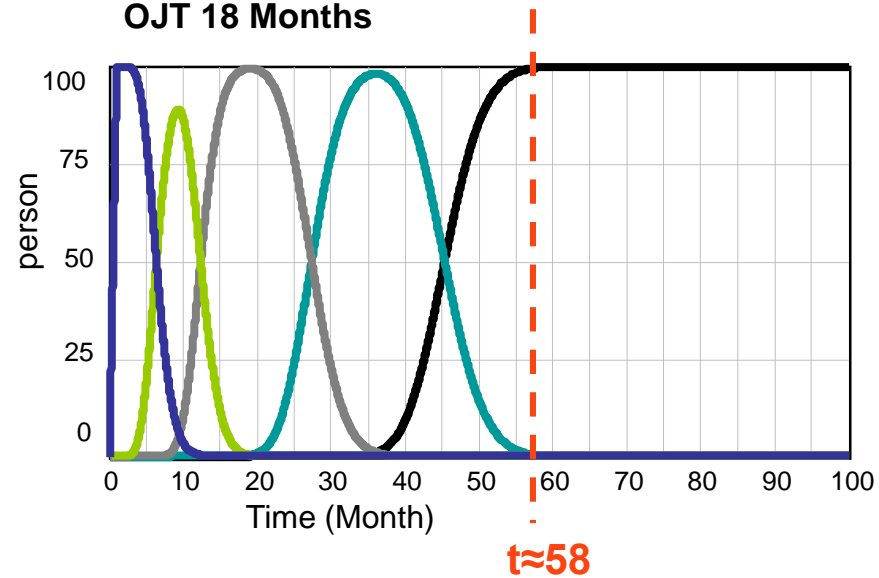







Resulting delay in goal achievement: “on average” is longer than you expect.

OJT 24 Months



OJT 18 Months



- Ordered ATCO 
- Signed ATCO 
- ATCO in IT 
- ATCO in OJT 
- ATCO 





Results from client's perspective:

- A more **detailed planning** paradigm can be implemented (group level instead of centre level);
- the personnel planning cycle can be repeated **several times** a year instead of only going through the process once a year;
- the **risk management** can be complemented by quantitative scenarios that are provided almost in real-time;
- intensified **communication** between all stakeholders;
- the new **scenario tool** can act as a learning platform for the case company as it integrates the experience and perspective of several departments.

