

# Moving Santam Insurance Towards Industry 4.0 Through Dynamic Simulation Resource Scheduling



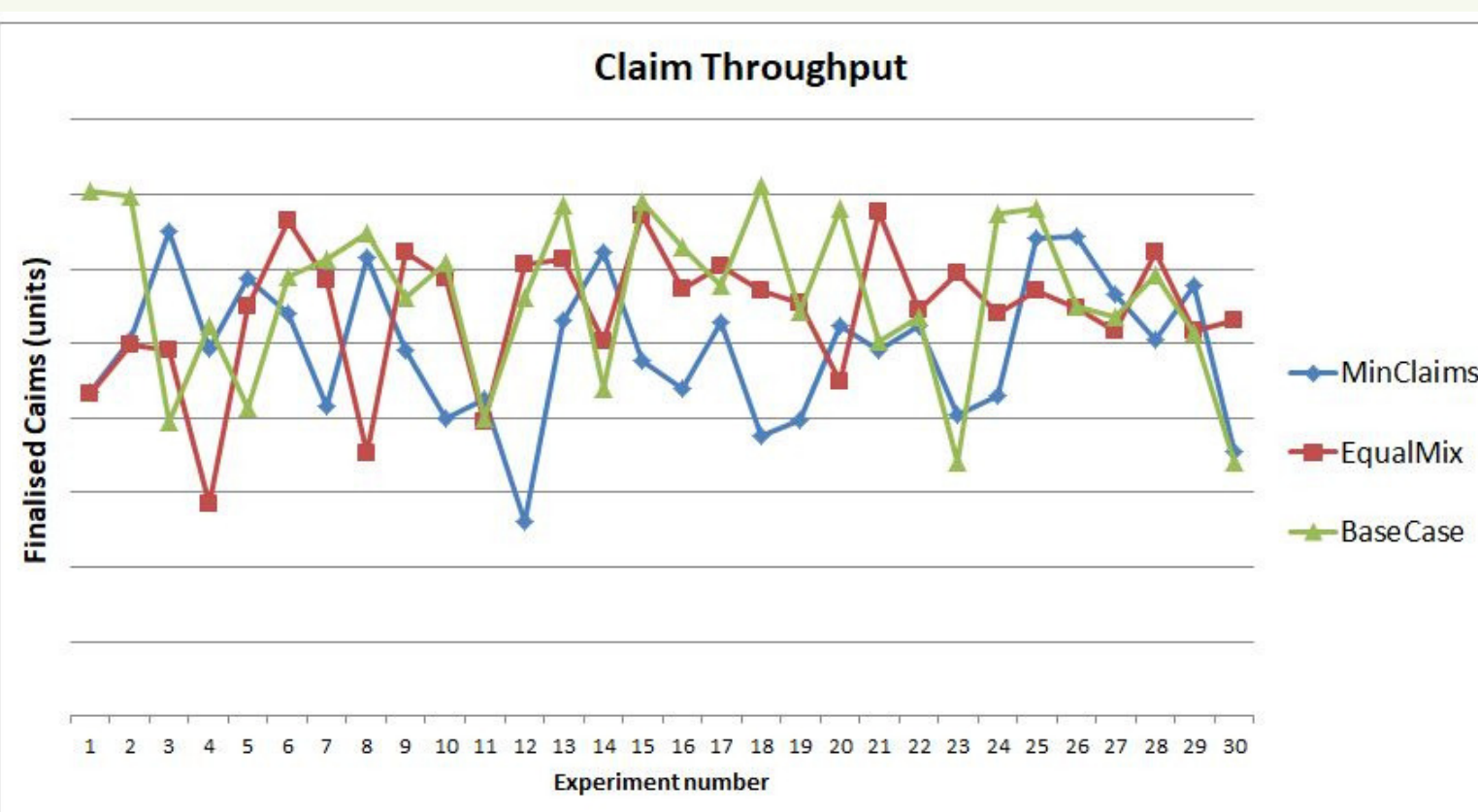
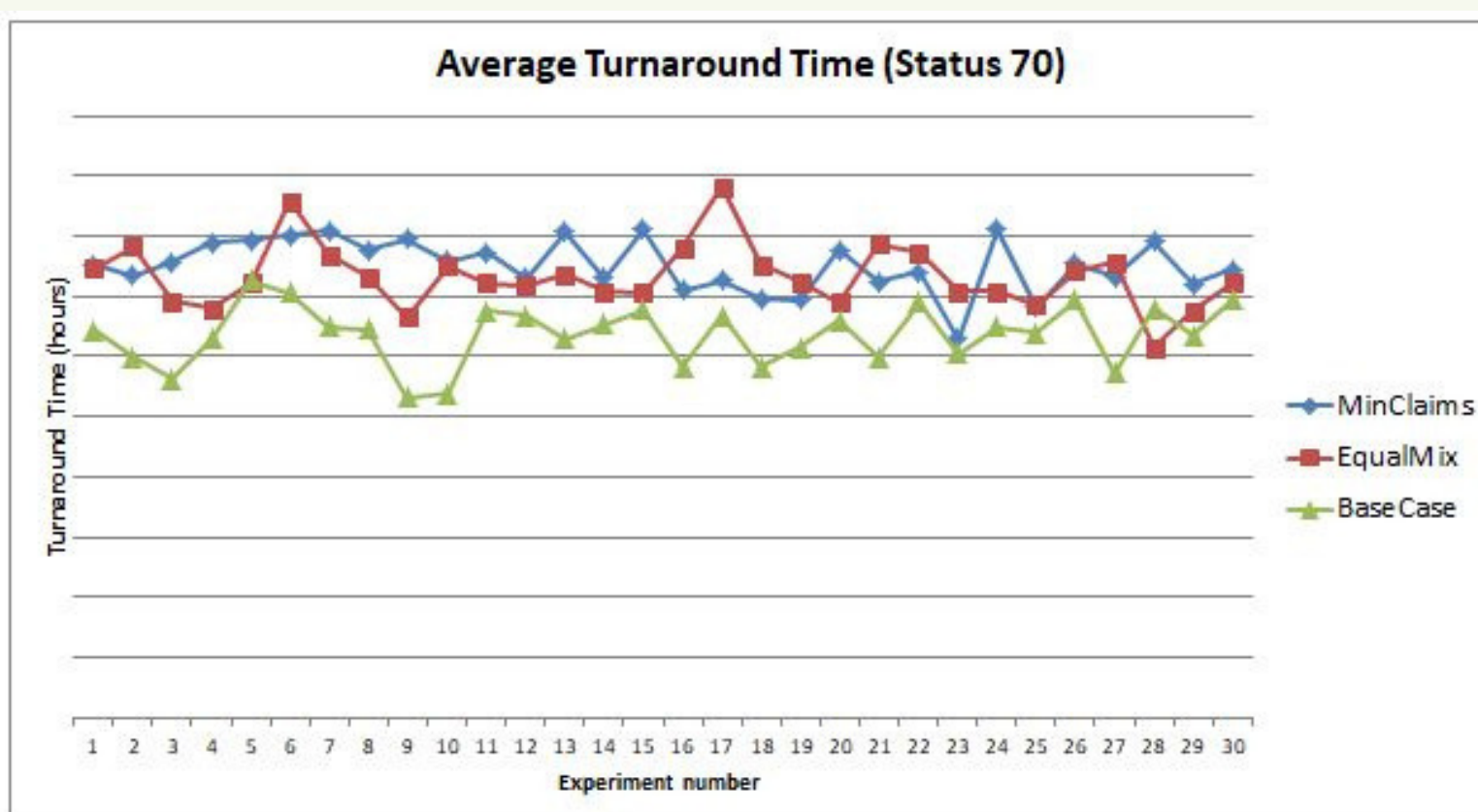
## 1 Background

Santam Insurance receives thousands of claims that have to be processed everyday. Claims are registered though the call center, sent to the respective service branches where the claim is validated and then a scheduler routes the claim to claim handlers who perform the assessment of the claim.

## 5 Results

Each suggested solution has been modeled as an experiment of which 30 replications were run for a period of 23 weeks.

	Created	Finalised	Resegmented	External
Equal Mix	27014	26535	327	63
Min Claims	26957	26440	332	50
Base	26979	26580	324	1683
Actual	27009	25926	361	1668

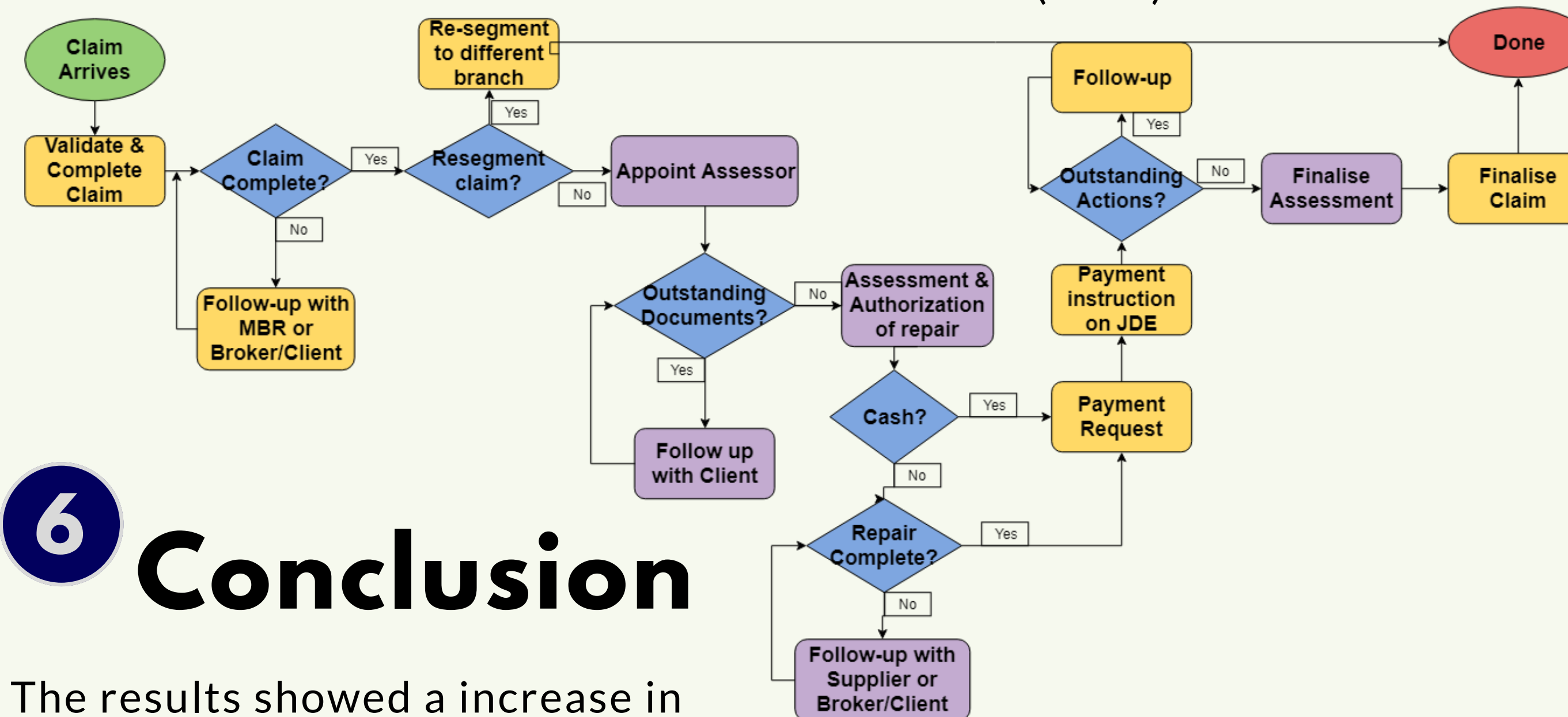


## 2 Problem

Santam's non-motor claims department is currently experiencing a work balance problem and due to the subjective scheduling logic and therefore an opportunity of improvement has arisen to better manage resources and workforce utilization.

## 4 Solution

A Simio Simulation model was built to represent the process of claim scheduling on the basis of minimising claim type proportions and minimising the claim WIP. The simulation followed the process portrayed below, appointing the assessor based on type proportion (Equal-mix), WIP Count (Min-Claims) or a "Good-Mix" (base).



## 6 Conclusion

The results showed a increase in throughput from internal assessors which results in a massive cost saving at the expense of customer service experiencing a delay of approximately 10 hours before claim finalisation. An improvement in system balance could be achieved by implementing a deterministic scheduling logic on a platform such as Simio Simulation which can be used to analyse the risk and the long term effects of a decision. Simulation as well as other Industry 4.0 tools and principles could largely benefit the company and the current model should thus be used as an education to introduce the this transition in the workplace.

## 3 Approach



### 3.1 Research

- Scheduling methods & Properties
- Industry 4.0 techniques
- Simulation Scheduling

### 3.2 Process Mapping

- BPMN
- Flowcharts



### 3.3 Data Analysis

- Time Studies
- Pareto analysis
- Chi Square Goodness of fit
- MicroSoft Excel VBA



### 3.4 Build Simulation Model

- Simio Simulation Software
- Validation



### 3.5 Run Scenarios

- Scenario 1: Allocate Claim to the handler with the smallest proportion of that claim type.
- Scenario 2: Allocate claim to the handler with the least number of claims
- Model resegmentation and allocations to external handlers

### 3.6 Evaluate

- How has throughput and turnaround time changed?
- Is it worth it?

