

## Data Science. Digital Transformation

Industry	Consumer Goods Manufacturing
Use Case Title	Cross Team Collaboration Prediction on Customer Support Issues
About the Customer	The Client is a leading Laptop and Desktop manufacturer in US. It provides Customer Technical support and Repair Services to there customers.
Business Problem	<p>The Client's contact centre was experiencing increasing customer escalations, at times directly to business leaders via email and social media. All of this impacting overall customer satisfaction</p> <p><b>Root cause analysis</b> revealed two key trigger points</p> <ul style="list-style-type: none"> <li>▪ Unfavourable resolution cycle time</li> <li>▪ Resolution quality issues leading to recurrence</li> </ul> <p><b>Client's requirement</b> Induce and integrate proactive cross-agent; cross-team collaboration as a standard practice for customer support delivery.</p>
Solution	<p><b>Deployment</b></p> <ul style="list-style-type: none"> <li>▪ Private Cloud</li> </ul> <p><b>Approach</b></p> <ul style="list-style-type: none"> <li>▪ Data was retrieved from CRM database. The data had 4 files that contain Case-level, Activity-level, Task-level and Agent-level information.</li> <li>▪ Case-level data contains summary of whole case.</li> <li>▪ Activity-level data contains automated updates that are updated multiple times for a case.</li> <li>▪ Task-level data contains manually entered information by the agent multiple times during a case.</li> <li>▪ Agent-level data contains agent-tenure information.</li> <li>▪ Case-level data contains information like Case Origin, Business Queue, Entitlement etc. which can be used as features. Activity-level data can be used to create features like number of inbound and outbound emails / calls etc. Agent-level data was used to get agent tenure.</li> <li>▪ Information in the activity-level data can only be used until either a work-order is created, or a collaboration request is raised.</li> <li>▪ Once features are created, divide data into train, validation and test data. Balance the data in the context of number of collab cases and non-collab cases.</li> <li>▪ Trained a LightGBM model for binary classification.</li> <li>▪ Test model on test data.</li> </ul> <p><b>Implementation</b></p> <ul style="list-style-type: none"> <li>▪ The entire project cycle was completed in 3 months.</li> <li>▪ New data dumps were available every month.</li> <li>▪ The implementation was done using Python and Machine Learning Models.</li> </ul>

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**Data Science. Digital Transformation****Outcome**

- Average time for predicted collaborations was lesser than when requested manually.
- ML interpretability was included to understand the decision-making process.
- Possible automation of collaboration request tickets.
- Understanding pre-cursors to collaboration requirements.
- Possible detection of escalation cases.
- 18780 cases identified and delivered collaboratively.
- 10% Escalation reduction.
- 50% Cycle Time Reduction.
- 9% CSAT Increase.