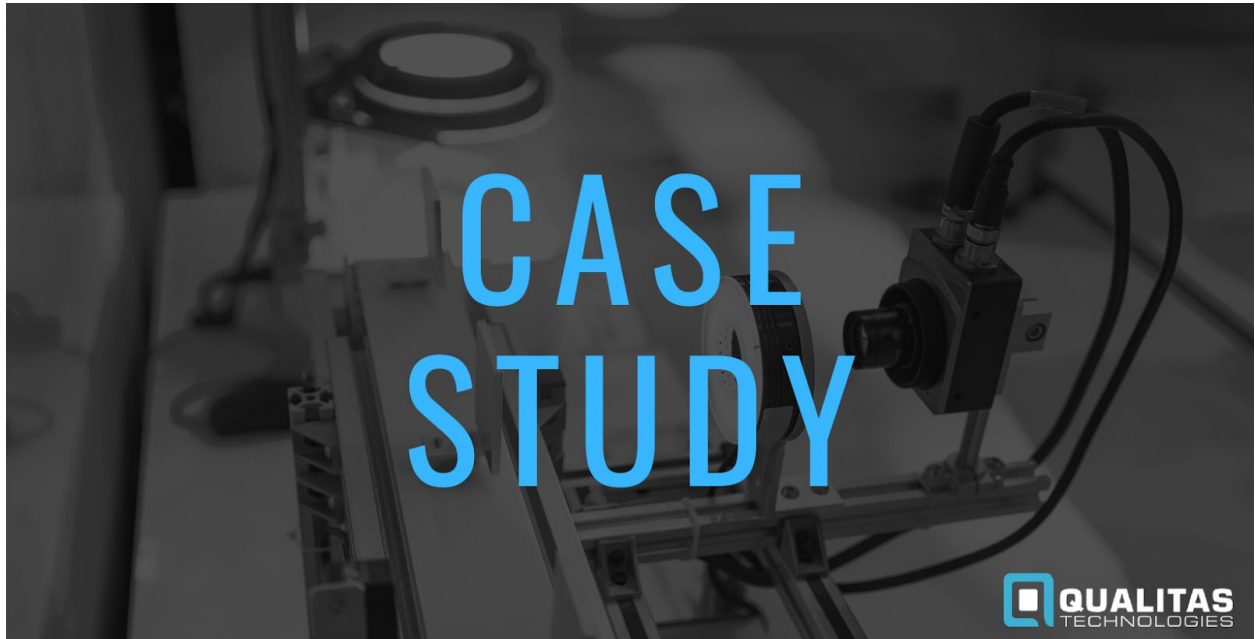


# Tobacco Classification

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## Client

Our client is an Indian multinational conglomerate company headquartered in Kolkata, West Bengal and was established early 1900s. With over 27,000 employees our client had a turnover of over 1.9 Billion in the year 2019.

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## Problem Faced

Sorting of tobacco variants in the production unit has been a major setback for our client because of human error and limited accuracy. And this results in lesser production profitability. The removal of manual segregation of tobacco and an automated solution was the primary concern.

## Technology introduced by Qualitas



Deep Neural Network helps in optimal decision-making with high accurate results for image processing. Processing of images without DNN operates by comparing the captured image to its master image. Since there is no robust and accurate algorithm, the classification of variants becomes complex for rule-based image processing solutions. But with Deep learning's best algorithm this complex classification can be achieved. An area scan camera is used with an appropriate Field Of Vision (FOV), so that the images taken are sharp and clear.

## Solution

- The tobacco leaves in the carton box were fed on the conveyor to the inspection area.
  - The presence of the carton box was triggered through a sensor connected in order to initiate image acquisition.
  - Captured images were then processed by AI-based software in a separate processing unit and the product type was identified.
  - The acquired results were displayed over a screen along with annotated images representing the identified product type.
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## Images

<i>Captured Image</i>	<i>Captured Image</i>
 <p data-bbox="224 835 376 865">SMALL STEM</p>	 <p data-bbox="873 842 971 871">STEM</p>

## Results

According to the trials conducted in house, results were extremely accurate.

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