CASE STUDY

relevance lab

# Unstructured Data Analytics Solution


## Abstract

For a medical devices manufacturer, we automated and developed a visual- and text-searchable image index by connecting multiple image sources. We used Natural Language Processing (NLP) to identify thousands of duplicate partss that helped save several man hours and optimized inventory leading to millions of dollars in savings.



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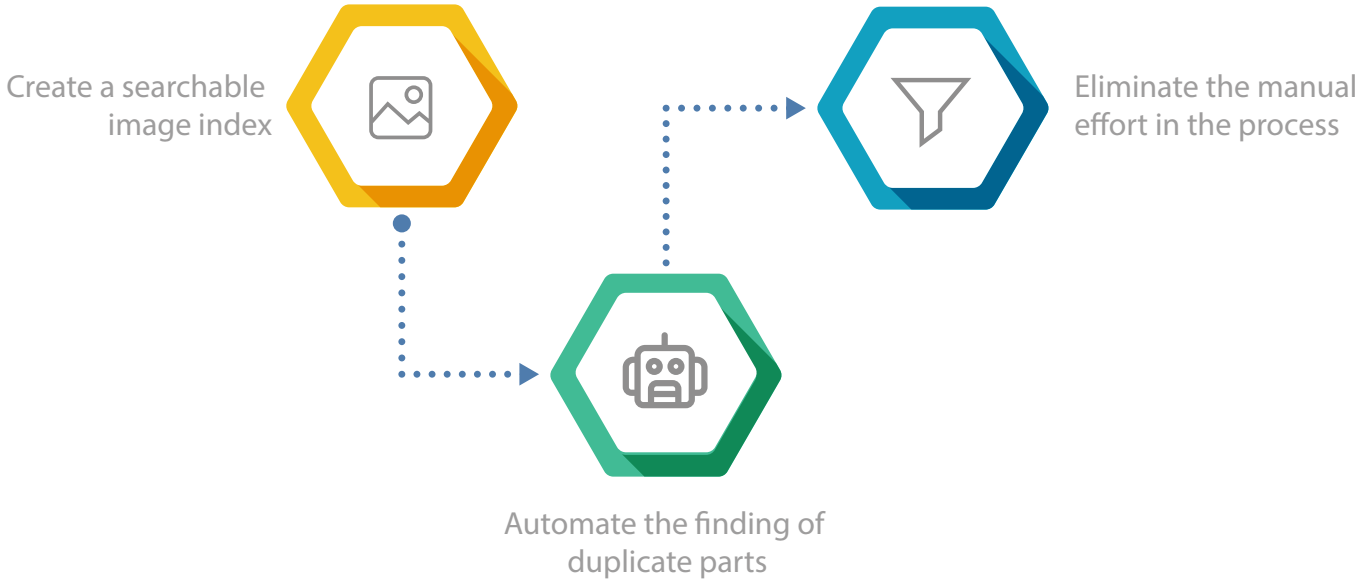
## Challenges

- Orthopaedics acquisition led to a $2bn inventory overlap in duplicate surgical instruments and sets
- Highly specialized parts required manual review of engineering drawings to distinguish
- Target of multi-million dollar P&L labor savings and inventory optimization
- 300,000 complex engineering drawings, 6 source systems
- Wildly varying image quality with some drawings belonging to as old as from 1970s
- No governance process in place

## Approach




## Solution

- Created a visual- and text-searchable drawing archive
- Engaging and simple user interface with text and thumbnail image drill-down
- Google-like search on all text from all drawings that allows easy sifting through 300K images
- NLP techniques found duplicates with high confidence
- Combined multiple image- and text-processing algorithms to create context-aware interpretations of text and improve accuracy; this requires minimal human intervention

## Outcome

- 1000s of duplicate parts identified
- Expected to drive over $50mn in inventory reduction as duplicateses are discontinued and drawn down
- De-duplication was previously viewed as impossible, due to the level of manual engineering review
- Solution is now an integral part of the engineering and R&D process for new part development
- Product engineers can easily pick the closest existing part as an innovation base

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