

# NEW RESOURCES CONSULTING

## CASE STUDY

AZURE AI SEARCH  
FOR QUOTE SCORING

## TECHNOLOGIES

A.I.

## INDUSTRY

MANUFACTURING

## CHALLENGE

A global manufacturer was overwhelmed by the daily influx of requests for quote emails, many of which were irrelevant to their production capabilities or not financially viable.

The company employed 15 staff members whose sole responsibility was to review requests for quote documents, including supporting materials and manuals, to determine whether to proceed with a quote. With an annual growth rate of 10-20%, the volume of incoming emails increased proportionally. Eager to avoid the unsustainable option of continuously hiring more personnel, the manufacturer sought a scalable solution in Machine Learning to handle the growing demand efficiently.

## APPROACH

The client recognized the limitations of a Machine Learning (ML) solution in providing definitive answers independently. They sought an approach where ML could initially serve as an assistant, enhancing human decision-making processes by significantly reducing the time required to reach conclusions. The envisioned solution was to be developed progressively, starting with ML support for human operators and then evolving to a reliable system to automate specific quote evaluations. The initial Minimum Viable Product (MVP) focused on augmenting human capabilities to achieve complete automation in the third milestone of the project roadmap.

## COGNITIVE SEARCH RESULTS

### At a glance...

- Machine learning engineers deployed Azure cognitive search to analyze quote request emails for a global manufacturer and create a scorecard for each one, scoring how appropriate the quote was for their business.
- Manual evaluation time was reduced, saving the company over \$500,000 a year in salaries.



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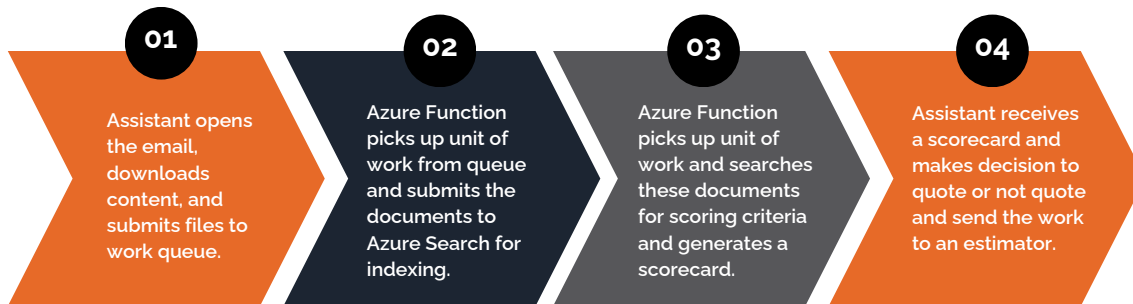
**MARK GROSSKOPF**  
Owner & CEO  
New Resources Consulting

# AREA OF FOCUS

To expedite time to value, we devised a three-phase project targeting the most labor-intensive aspects of the quote process. The initial phase focused on automating the reading and evaluation of PDF documents and manuals. Our MVP begins with an assistant who receives quotes via email, downloads the email and its content, and uploads them to a work queue. This queue is managed by a function in Azure that forwards the documents to Azure Search for indexing and evaluation.

## SOLUTION

The Azure Search instance was enhanced with cognitive search capabilities, including OCR, image recognition, and key phrase extraction. This setup enabled the efficient parsing of diverse document formats. Subsequently, another Azure Function was employed to process the workload based on specific criteria provided by the customer.



These criteria included but were not limited to:

- Building square footage
- Bid due date
- Relevant keywords, such as the company's name and popular product names
- Uniqueness of the identifier to determine if the project had been previously bid

## RESULTS

Two primary metrics measured the impact of the project:

- 1. Time Efficiency:** The average time to process each quote was reduced from 13.2 minutes to just 2.1 minutes.
- 2. Resource Efficiency:** The number of estimator assistants needed to handle all quotes decreased significantly. The team was reduced from 15 to just 6, allowing the company to reallocate staff to other business areas and save approximately \$500,000 annually in salaries.

These results highlight the efficiency and cost-saving benefits of leveraging advanced machine learning technologies.

### Scorecard

<b>Project name:</b>	<Name> <Address>
Unique Id:	xxx-xxxxxx-xxx
Bidder:	<Company Requesting Bid>
Customer Type:	xxxxxx
Bid Email Date:	2/1/2024
Bid Due Date:	3/1/2024
Square footage:	37,000
<b>Keywords found:</b>	
<Manufacturer Name>:	17
<Product Name 1>:	3
<Product Name 2>:	4
<b>Duplicate?</b>	
Bid was found:	Yes
Last Bid, Bidder Name:	xxxxxxxx
<b>Documents evaluated:</b>	
<document name 1>.pdf	
<document name 1>.docx	

The scorecard, delivered to the assistant, guided their decision to bid or decline. If declined, they sent a decline-to-bid email; if approved, they forwarded the details to an estimator.