

Clinical Supply Process Optimization Tool



Company Background

Pfizer's Global Clinical Supply manages 400+ active trials at any given moment, sources and supplies trials with investigational product, and delivers drugs to patients.

One of Pfizer's core principles is "time is life", which motivates them to optimize their processes in order to deliver life changing drugs to patients faster.



Time is Life

Problem

Supply chain planning is complex, rigid, and time intensive. Identifying risks and making decisions requires:

Reliance on intuition and prior experience

Thorough understanding of numerous documents (often 70+ pages)

Presence of experts from all functional lines

Coordination of long meetings around everyone's schedules

Project Goal

Develop a tool that identifies optimizations in Pfizer processes while also minimizing risk.

Design Process

Research: Before receiving any data, we read case studies about Pfizer's COVID vaccination development. This familiarized us with the pharmaceutical processes our solution is optimizing for, as well as Pfizer's values of speed and efficiency.

Interview: Each liaison represents a functional line within GCS. By talking to them, we gained a broad perspective on various pain points and desires to address in our solution.

Understand: Our liaisons gave us a package consisting of data commonly used in each trial. By taking time to understand the purpose and format of each document, we could better design our solution to effectively handle the information.

Codesign: As we created our designs, we hosted codesign sessions with our liaison team to gain immediate feedback on how well our design aligned with their wants and needs. This helped us quickly and iteratively refine our solution.

Develop: After solidifying a design, we started building our solution within Pfizer's ecosystem. However, we quickly recognized that our level of access to their internal tools made this route infeasible. Using mocked and publicly-available data, we pivoted to creating a proof-of-concept that could later be integrated by Pfizer's tech team.

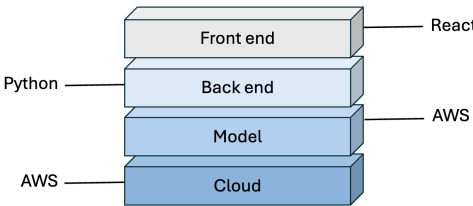
Deliver: In addition to the codebase our team has developed, we also provided technical documentation and suggestions for future steps for Pfizer's tech team.

Solution

We designed an AI tool that references documents from Pfizer's clinical trials and data about known risks, alternative decisions, and expected timeline impacts from previous trials.

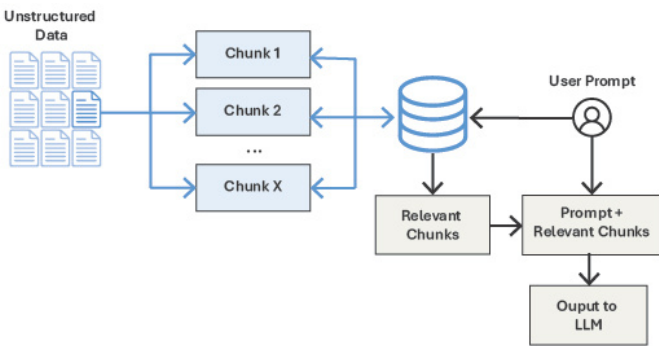
Our solution quickly identifies potential risks and alternative decisions for a Pfizer expert to evaluate, which accelerates the overall decision-making process.

We used the following tools to create our solution:



To handle PDF data, we employed preprocessing techniques to break down long documents into small usable chunks.

We used a Large Language Model (LLM) to work with the text-based data. To ensure our model also referenced the risk and timeline tables, we implemented Retrieval-Augmented Generation (RAG).



Impact

By identifying recommended risks through the analysis of past documents and data, we can support Pfizer's Global Supply Chain with making efficient, data-driven decisions. This approach allows us to optimize the supply chain, delivering drugs more quickly and ultimately saving lives.



Deliver HOPE to patients

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Special Thanks:

Pfizer Liaisons, Spyridon Georgopoulos, Riyamol George, Vaishali Chavan, Pfizer Tech Team, SCOPE Teaching Team