

LLMs in Clinical Development

Introduction

Large Language Models (LLMs) have demonstrated substantial benefits across various sectors, offering enhanced efficiency through automation of text generation tasks – creation of commercial content, programming assistance, brainstorming partner. However, **the translation of these benefits to clinical development is not straightforward**, due to industry-specific challenges such as:

Regulatory compliance

Can GenAI be validated for GxP use? Does it need to be validated? Can it be incorporated into existing process?

Data security and privacy

How do we handle sensitive patient data and comply with GDPR/HIPAA?

Accuracy & Traceability

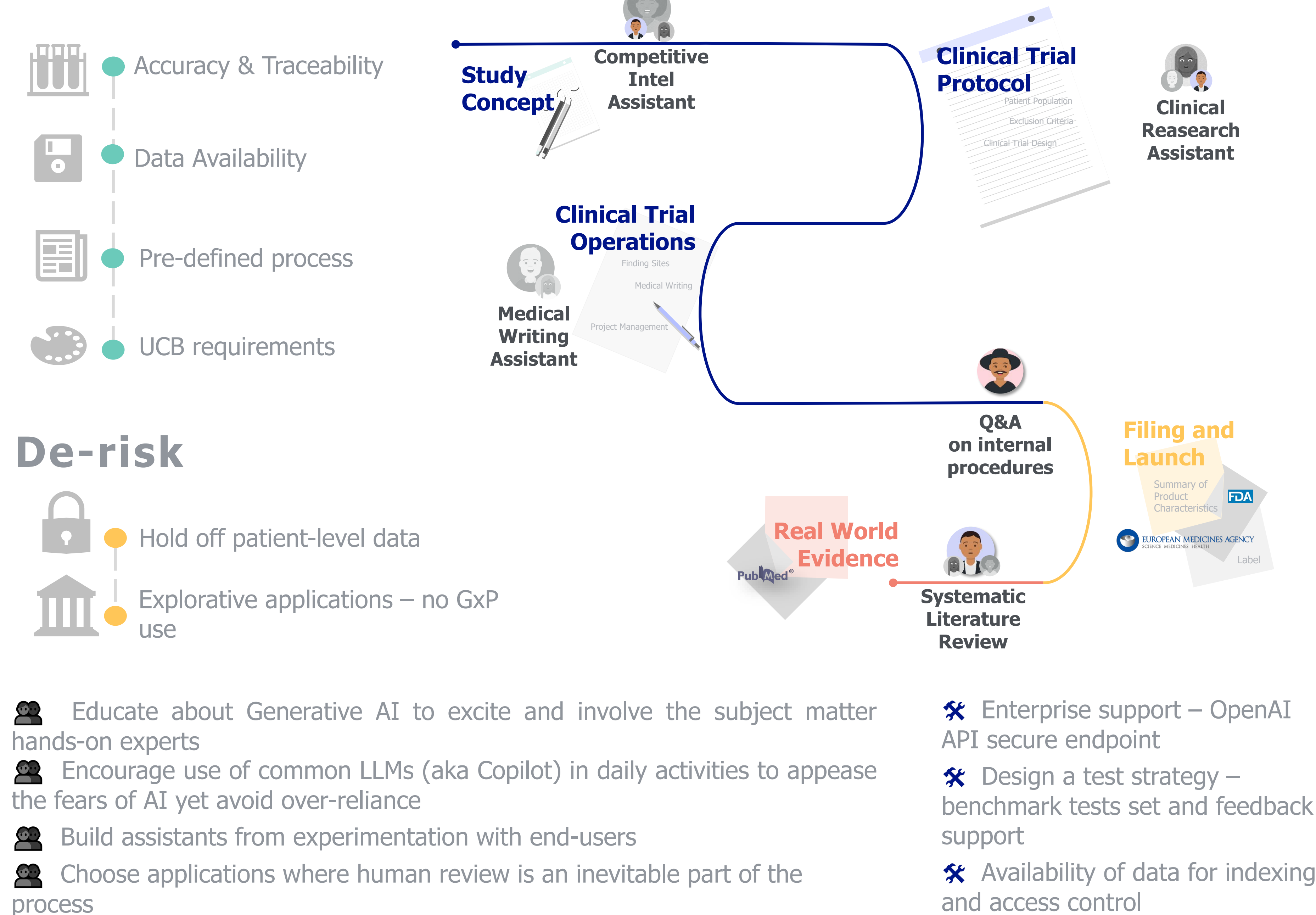
Can we guarantee it and how far can we push?

Company requirements

Specific templates and way of working

Can LLMs be effectively used in Clinical Development?

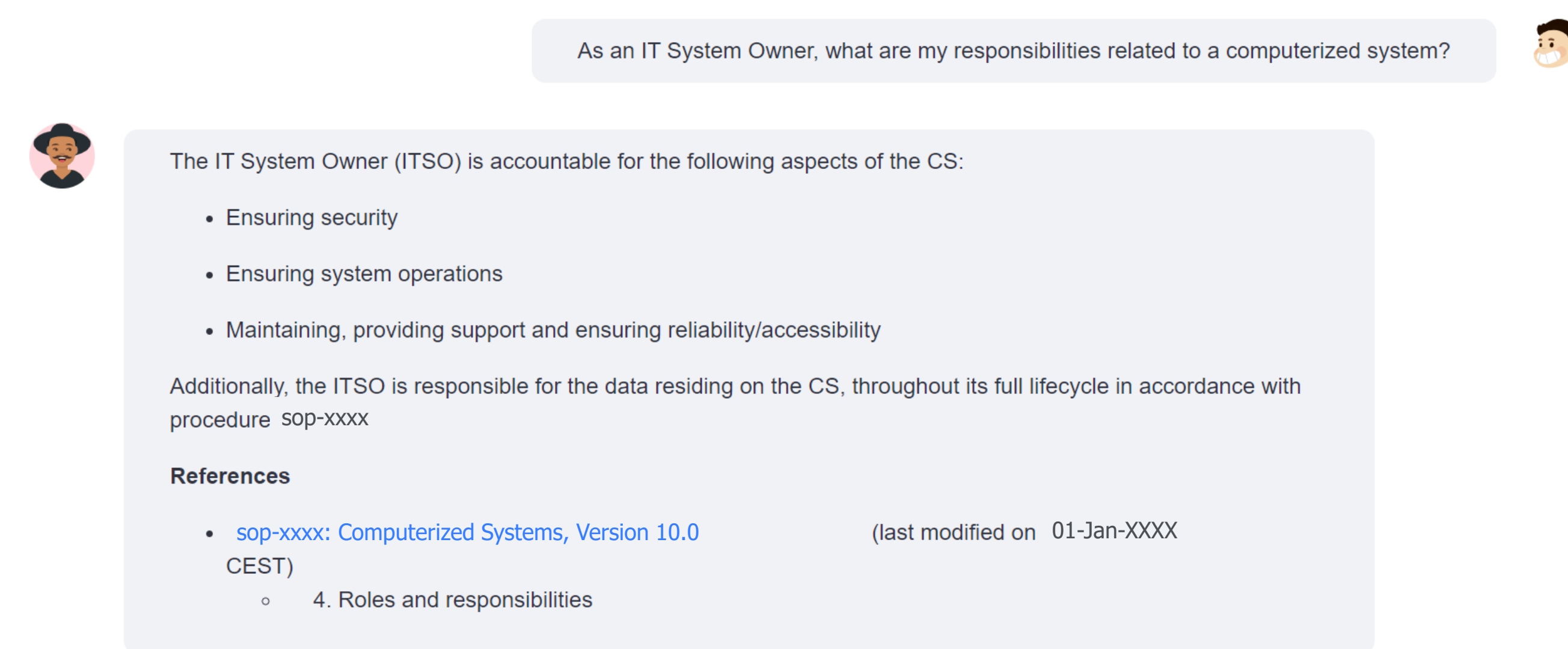
Clinical Development Flow and Opportunities Benefit



Query Quinn

Q&A on internal procedures

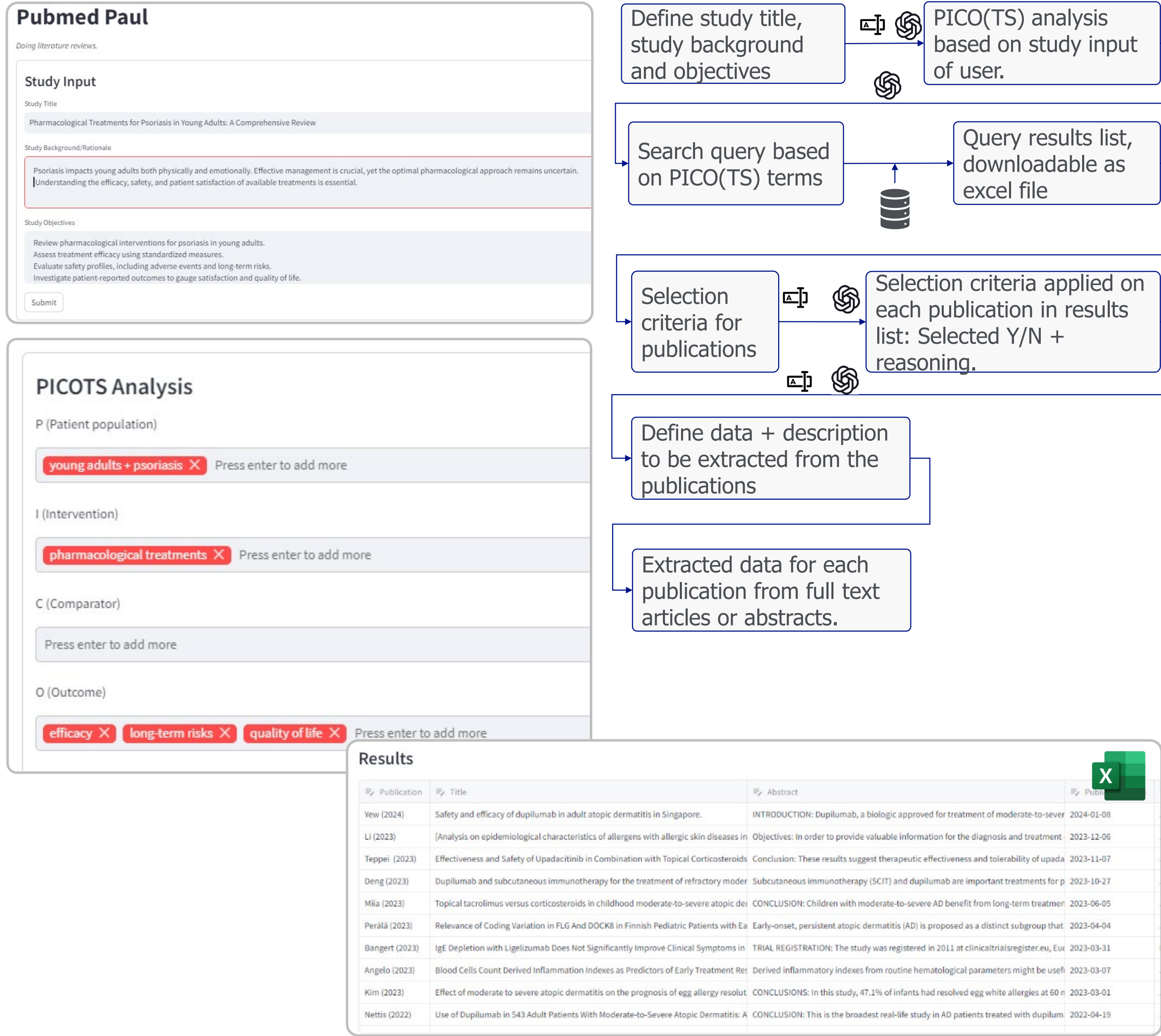
Augmenting LLMs with information from internal procedural documents for more efficient and user-friendly information retrieval



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Systematic Literature Review

Utilizing generative AI to facilitate literature review execution by automating manual steps in the process.



Conclusion

- LLMs can enhance efficiency but end-to-end apps will require custom configuration (from choice of model to embeddings to data preparation) for specific needs.
- Setting up a functional LLM is relatively easy, but optimizing performance is difficult.
- The importance of accuracy and explainability is paramount, yet there are scenarios where quality control can be organically integrated into user journeys
- Considering accuracy will never be perfect, human review becomes more important and should be included in ROI calculations.
- The prevalence of edge cases can pose a constraint on accuracy.
- A careful balance between generalizability and specificity, affecting the LLM's usefulness and correctness, must be maintained.