# AI-Powered Template Generation Engine

## Context & Motivation

In consulting and strategic analysis, structured, evidence-backed deliverables are critical. Creating such outputs — whether in the form of reports, proposals, or slide decks — often involves **manually organizing information**, **aligning with custom formats**. This process is time-consuming, error-prone, and inconsistent across different consultants or teams.

An AI-powered consultant driven by a **dynamic template engine** can transform this workflow. By letting users define or refine templates **conversationally**, and by ingesting **multimodal inputs** such as documents, spreadsheets, images, charts, videos or audio, the system can generate **consultant-grade outputs** that are **aligned to user requirement**

This challenge invites participants to design such a system — one that adapts in real time, asks clarifying questions to refine scope, and outputs content that is both **custom-shaped** to user needs

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## Core Requirements

### Inputs

- Multimodal source materials (e.g., PDF reports, PPT decks, Excel sheets, images, charts, audio transcripts, videos).
- User-defined or evolving templates with:
    - Sections, headings, and ordering.
    - Tone and writing style.
    - Output formats (DOCX, PDF).

- Scope definition through conversation (system should prompt for missing details).

**System Capabilities**

- **Dynamic Template Engine**: Users can define or adjust templates conversationally, with changes reflected in real time, Example: "Add an Executive Summary section at the top"

- **Multimodal Ingestion & Parsing**: Extract relevant content from varied sources with contextual understanding.

- **Evidence-Backed Outputs**: Every statement linked to its source (page number, slide ID, timestamp).

- **Scope Clarification**: AI proactively asks questions to ensure accuracy and completeness.

- **Traceability & Transparency**: Show mapping between extracted content and final output sections.

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# Expected Deliverables

- **Functional Prototype**:
    - Ingest and process multimodal inputs.
    - Apply and adapt templates via conversational interaction.
    - Produce outputs with correct structure, style.

- **User Interface**:

    - Dashboard for uploading sources, defining templates, and viewing outputs.
    - Conversational interface for template refinement.
- **Documentation**:
    - Describe template engine logic, ingestion pipeline.

- **Future Roadmap:**
    - Design a prototype to illustrate the product's future roadmap.

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# Success Criteria

- Outputs match the user-defined requirement 100% in structure, tone.
- All claims in output are evidence-backed with correct references.
- Template changes are reflected in real time without re-ingestion delays.
- Multimodal sources are processed accurately and contextually.

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# Brownie Points

1. Output formats being PPTX files, ingesting and identifying presentation templates
2. Each response should be grounded with citations from original sources