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# **CAPSTONE PROJECT**

## **20. START-UP BLUEPRINT GENERATOR AGENT**

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# OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

# START-UP BLUEPRINT GENERATOR AGENT

## Example:

Currently, many aspiring entrepreneurs in India struggle to convert raw business ideas into structured plans due to a lack of knowledge, fragmented resources, and overwhelming regulatory requirements. Although government portals, funding schemes, and incubators exist, founders often find it difficult to navigate this scattered ecosystem. The crucial part is transforming an unstructured idea into an actionable blueprint—one that includes a business model, market strategy, budget, legal formalities, and funding options. The Startup Blueprint Generator Agent addresses this challenge by automating and personalizing this transformation process using AI and policy-grounded retrieval.

# PROPOSED SOLUTION

The system aims to convert raw startup ideas into structured business blueprints using AI and real government data. It uses **Retrieval-Augmented Generation (RAG)** with large language models to deliver personalized outputs.

## Data Collection:

- Gather PDFs on startup schemes, incubators, and policies.

## Preprocessing:

- Clean and structure text.
- Create vector embeddings for smart document search.

## AI & Prompting:

- Use **Granite-13b** model via **Watsonx.ai**.
- Generate: Business Canvas, Budget, GTM plan, Legal steps, and Funding suggestions.

## Deployment:

- Build the agent in **IBM Agent Builder**.
- Enable tools like Document Search and Google/Wikipedia.

## Evaluation:

- Check accuracy, completeness, and real-world relevance.
- Improve with user feedback.

## Result:

- Outputs tailored startup plans instantly.
- Saves time and improves planning accuracy.

## Objective:

- Automate business blueprint generation using AI.

# SYSTEM APPROACH

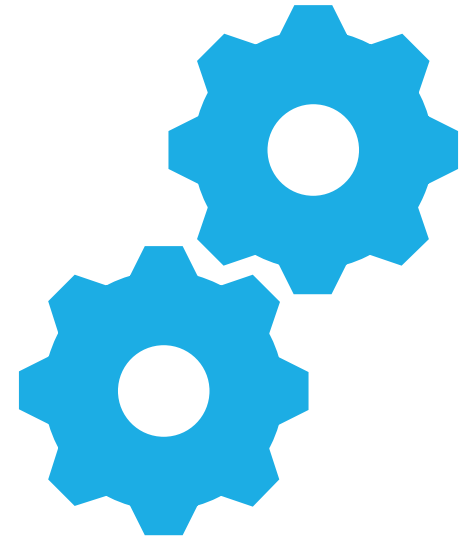
The "System Approach" section outlines the overall strategy and methodology for developing and implementing the Startup Blueprint Generator Agent.

## System Requirements:

- IBM Cloud account (Lite or above)
- IBM Watsonx.ai service with access to Granite LLMs
- IBM Cloud Object Storage for storing policy documents
- IBM Agent Builder for deploying and managing the AI agent
- Optional frontend framework (e.g., Streamlit or Flask) for user interaction

## Libraries Required to Build the Model:

- `ibm-watsonx-ai` – for accessing Granite model APIs
- `ibm-watsonx-document-search` – for vector-based document retrieval (RAG)
- `PyMuPDF` or `pdfplumber` – to extract text from PDF documents
- `Langchain` (*optional*) – for advanced prompt orchestration
- `Streamlit` – to create a simple user interface
- `pandas`, `numpy` – for basic data handling
- `scikit-learn` (*optional*) – for evaluation or enhancement



# ALGORITHM & DEPLOYMENT

- **Algorithm Selection:**

The system uses **Retrieval-Augmented Generation (RAG)** with **Granite-13b-chat-v1**, a powerful language model from IBM. This approach allows the agent to generate accurate, context-rich startup plans using real policy documents.

- **Data Input:**

- User's startup idea (text input)
- Retrieved content from indexed PDFs (e.g., schemes, legal guides, incubator handbooks)

- **Training Process:**

- No model training required
- Uses **prompt engineering** and **document indexing** for relevance
- Optimized using manual feedback and test queries

- **Prediction Process:**

- The agent retrieves relevant info from documents
- Feeds it to the Granite model with the user's idea
- Outputs a structured startup blueprint with budget, strategy, and funding suggestions

# RESULT

The screenshot displays the IBM watsonx Agent Lab interface. The browser address bar shows the URL: `dataplatform.cloud.ibm.com/wx/agents?context=wx&project_id=3ddfa96e-da7a-4a2a-8e9a-4aa23e7f62e6`. The page header includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user information for 'Aangi Shah's Account' in 'Dallas'. The main navigation bar shows 'Projects / Startup\_Blueprint\_Generator\_Agent / Agent Lab' and buttons for 'Share feedback', 'Unsaved', 'New agent +', and 'Deploy'.

The interface is split into two main panels. The left panel, titled 'Build', contains several sections:

- Setup**: A dropdown menu.
- Configuration**: A section with two dropdowns: 'Framework' set to 'LangGraph' and 'Architecture' set to 'ReAct'.
- Instructions**: A text area containing the instruction: 'You are a startup blueprint assistant. Ask the user to give only the name of their start-up idea. When a user wants to describe a startup idea, they generate a detailed business plan using real documents and retrieved data.' There is an 'Advanced configuration' link and an 'Include' button.
- Knowledge**: A section with a 'Vector index' dropdown set to 'Select or create vector index' and a 'Clear chat' link.
- Tools**: A section at the bottom.

The right panel, titled 'Agent preview', shows a chat history:

- User (AS)**: 'You: 10:26 AM' followed by 'Hiii'.
- watsonx Agent**: '10:26 AM' followed by a response: 'To get started with your startup idea, I'll need the name of it. Please provide the name of your startup idea so I can help you generate a detailed business plan using real documents and retrieved data, including a Business Model Canvas, Estimated Budget, Go-To-Market Strategy, Legal/Regulatory Requirements, and Funding Sources or Incubators.' Below the response is a link: '► How did I get this answer?' and a refresh icon.

At the bottom of the chat is a text input field with the placeholder 'Type something...' and a green circular button with a white 'G' and a plus sign.

# RESULT

The screenshot displays the IBM watsonx Agent Lab interface in a web browser. The browser tabs show 'Agent Lab (beta) — Docs | IBM', 'Agent Lab — Startup\_Blueprint', and 'watsonx Agent — Nutrition\_ag'. The address bar shows the URL: `datapatform.cloud.ibm.com/wx/agents?context=wx&project_id=3ddfa96e-da7a-4a2a-8e9a-4aa23e7f62e6`. The page header includes 'IBM watsonx', an 'Upgrade' button, a help icon, a notification bell, the user 'Aangi Shah's Account', the location 'Dallas', and a profile icon 'AS'.

The main content area is divided into two panels. The left panel, titled 'Build', contains sections for 'Setup', 'Configuration', 'Instructions', 'Knowledge', and 'Tools'. Under 'Configuration', the 'Framework' is set to 'LangGraph' and the 'Architecture' is set to 'ReAct'. The 'Instructions' section contains the text: 'You are a startup blueprint assistant. Ask the user to give only the name of their start-up idea. When a user wants to describe a startup idea, they generate a detailed business plan using real documents and retrieved data.' The 'Knowledge' section has a 'Vector index' dropdown set to 'Select or create vector index' and a 'Clear chat' link. The right panel, titled 'Agent preview', shows a chat history with a user message 'Portfolio Manager' and an agent response: 'Here is a potential business plan for a startup called "Portfolio Manager":'. The response includes a 'Business Model Canvas' with the following details:

- Customer Segments: Investors, financial institutions, and individuals looking to manage their portfolios
- Value Proposition: A user-friendly platform for managing and optimizing investment portfolios
- Channels: Online platform, mobile app, and customer support
- Customer Relationships: Personalized support, regular updates, and educational resources
- Revenue Streams: Subscription fees, transaction fees, and advertising
- Key Resources: Development team, marketing team, and customer support team
- Key Activities: Developing and maintaining the platform, marketing and promoting the platform, and providing customer support
- Key Partners: Financial institutions, investment firms, and technology providers
- Cost Structure: Development costs, marketing costs, customer support costs, and infrastructure costs

The 'Agent preview' panel also includes an 'Estimated Budget' section:

- Development costs: \$200,000
- Marketing costs: \$100,000

At the bottom of the 'Agent preview' panel is a text input field with the placeholder 'Type something...' and a send button.



# RESULT

The screenshot displays the IBM watsonx Agent Lab interface in a web browser. The browser's address bar shows the URL: `dataplatfom.cloud.ibm.com/wx/agents?context=wx&project_id=3ddfa96e-da7a-4a2a-8e9a-4aa23e7f62e6`. The page header includes the IBM watsonx logo, an 'Upgrade' button, and user information for 'Aangi Shah's Account' in 'Dallas'.

The main interface is divided into two panels. The left panel, titled 'Build', contains several sections for configuring the agent:

- Setup**: A section for initial agent configuration.
- Configuration**: Includes dropdowns for 'Framework' (set to 'LangGraph') and 'Architecture' (set to 'ReAct').
- Instructions**: A text area containing the instruction: 'You are a startup blueprint assistant. Ask the user to give only the name of their start-up idea. When a user wants to describe a startup idea, they generate a detailed business plan using real documents and retrieved data.' A 'Clear chat' link is visible.
- Knowledge**: A section for adding vector indexes, with a 'Select or create vector index' dropdown.
- Tools**: A section for defining tools available to the agent.

The right panel, titled 'Agent preview', shows the output of the agent's configuration. It includes a list of costs, a go-to-market strategy, legal requirements, and funding sources:

- Costs**:
  - Marketing costs: \$100,000
  - Customer support costs: \$50,000
  - Infrastructure costs: \$20,000
  - Total budget: \$370,000
- Go-To-Market Strategy:**
  - Develop a minimum viable product (MVP) and launch it to a small group of beta testers
  - Gather feedback and iterate on the product
  - Launch a marketing campaign to promote the platform to potential customers
  - Offer a free trial or demo to potential customers
  - Partner with financial institutions and investment firms to offer the platform to their customers
- Legal/Regulatory Requirements:**
  - Register the business and obtain necessary licenses and permits
  - Comply with financial regulations and laws, such as anti-money laundering and know-your-customer laws
  - Ensure the platform is secure and compliant with data protection laws
  - Obtain necessary insurance coverage, such as liability insurance and cyber insurance
- Funding Sources or Incubators:**
  - Venture capital firms
  - Angel investors

At the bottom of the 'Agent preview' panel is a text input field with the placeholder 'Type something...' and a send button.

# RESULT

The screenshot displays the IBM watsonx Agent Lab interface in a web browser. The browser's address bar shows the URL: `dataplatfom.cloud.ibm.com/wx/agents?context=wx&project_id=3ddfa96e-da7a-4a2a-8e9a-4aa23e7f62e6`. The page header includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, the user's account 'Aangi Shah's Account', the location 'Dallas', and a profile icon 'AS'. The main navigation bar shows 'Projects / Startup\_Blueprint\_Generator\_Agent / Agent Lab' and buttons for 'Share feedback', 'Unsaved', 'New agent', and 'Deploy'.

The interface is divided into two main panels. The left panel, titled 'Build', contains several sections: 'Setup', 'Configuration', 'Instructions', 'Knowledge', and 'Tools'. In the 'Configuration' section, 'LangGraph' is selected for the Framework and 'ReAct' for the Architecture. The 'Instructions' section contains the text: 'You are a startup blueprint assistant. Ask the user to give only the name of their start-up idea. When a user wants to describe a startup idea, they generate a detailed business plan using real documents and retrieved data.' The 'Knowledge' section has a 'Vector index' dropdown with the option 'Select or create vector index'. The 'Tools' section has buttons for 'Add a tool' and 'Create custom tool'.

The right panel, titled 'Agent preview', shows a list of bullet points: 'Partner with financial institutions and investment firms to offer the platform to their customers'. Below this, it lists 'Legal/Regulatory Requirements:' with three items: 'Register the business and obtain necessary licenses and permits', 'Comply with financial regulations and laws, such as anti-money laundering and know-your-customer laws', and 'Ensure the platform is secure and compliant with data protection laws'. It also lists 'Funding Sources or Incubators:' with four items: 'Venture capital firms', 'Angel investors', 'Crowdfunding platforms', and 'Incubators and accelerators, such as Y Combinator or 500 Startups'. A paragraph follows: 'This is just a rough outline, and there are many details that will need to be fleshed out as you develop your business plan. However, this should give you a good starting point for creating a comprehensive plan for your startup.' At the bottom of the preview panel is a text input field with the placeholder 'Type something...' and a 'Send' button.

# CONCLUSION

- The Startup Blueprint Generator Agent provides a powerful AI-driven solution to help aspiring entrepreneurs transform raw ideas into complete, structured business plans. By combining IBM's Granite language model with document retrieval (RAG), the agent delivers accurate, relevant, and actionable outputs grounded in real-world data. It significantly reduces the time and effort required for early-stage planning, making entrepreneurship more accessible and informed. This system demonstrates how AI can effectively bridge the gap between ideation and implementation in the startup ecosystem.

# FUTURE SCOPE

- **Multilingual Support:** Extend the agent to support regional languages for wider accessibility across India.
- **Real-Time Data Integration:** Connect live APIs for startup portals, funding databases, and incubator updates.
- **Investor & Mentor Matching:** Recommend relevant investors, VCs, and mentors based on startup domain and stage.
- **Interactive Chat Interface:** Build a chatbot UI for more conversational and guided planning assistance.
- **Mobile App Deployment:** Launch a mobile-friendly version for quick access and idea submission on the go.
- **Pitch Deck Generation:** Automatically create investor-ready pitch decks from the generated blueprint.

# REFERENCES

- **IBM Watsonx.ai**  
<https://www.ibm.com/products/watsonx-ai>
- **Granite Foundation Models**  
<https://www.ibm.com/blog/granite-models>
- **Startup India Portal**  
<https://www.startupindia.gov.in>
- **IBM Cloud Object Storage**  
<https://www.ibm.com/cloud/object-storage>
- **Langchain (for RAG)**  
<https://www.langchain.com>

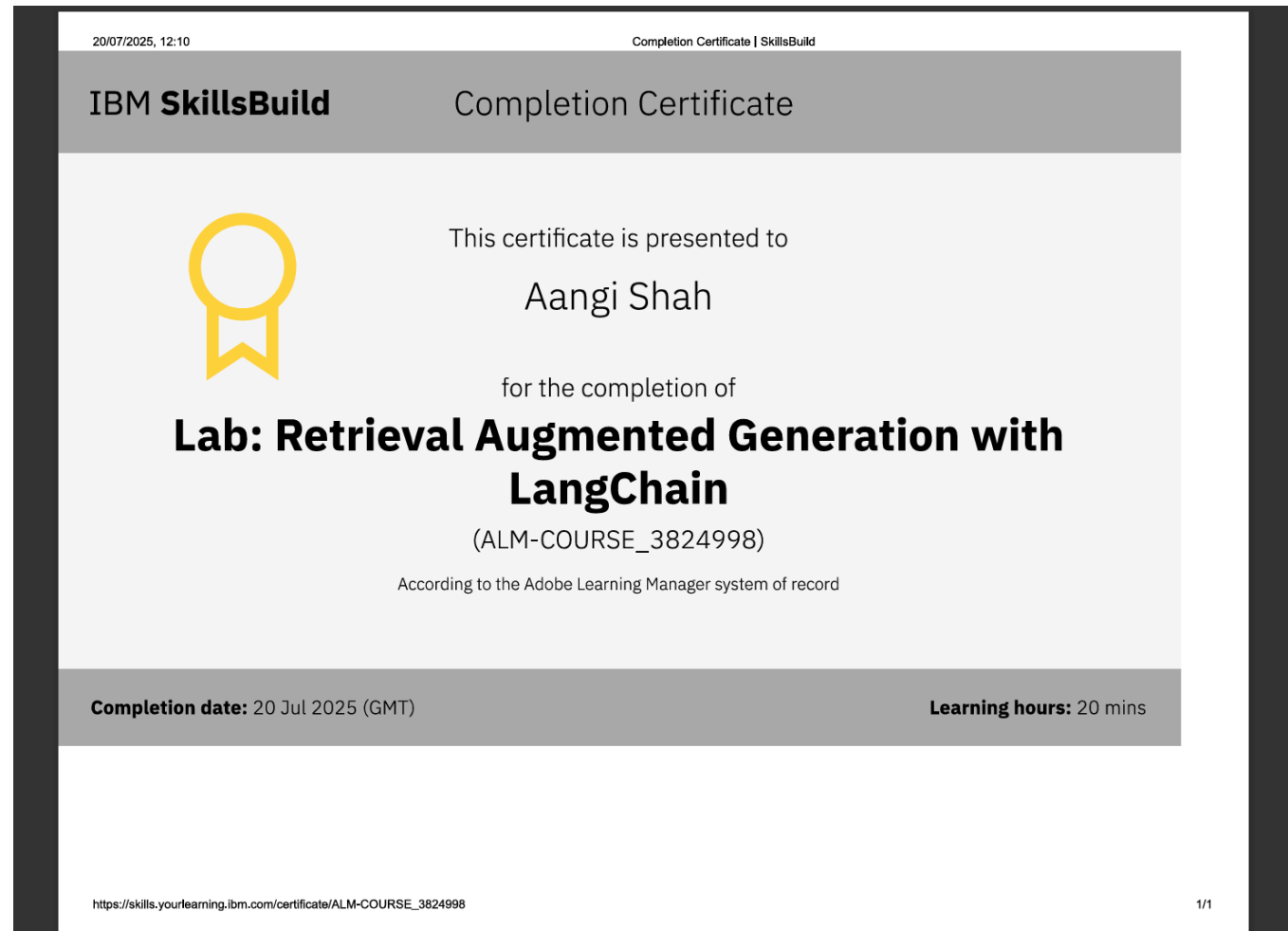
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