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GenAI Assisted Model Validations

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The Project Team

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Background

What is important to Aegon

1. **Tailored** to Aegon Model Validation framework and process
2. Human **expert**, the model validator, in the middle
3. **Model agnostic** solution: no lock-in cost to a particular model vendor yet
4. A solution that **improves** over time and is not outdated in the near future
5. A **flexible** solution that is adaptable to (model validation) process changes
6. Develop together with the team to **increase AI fluency**

Ultimate time savings goal

50% time saving compared to complete manual evaluation

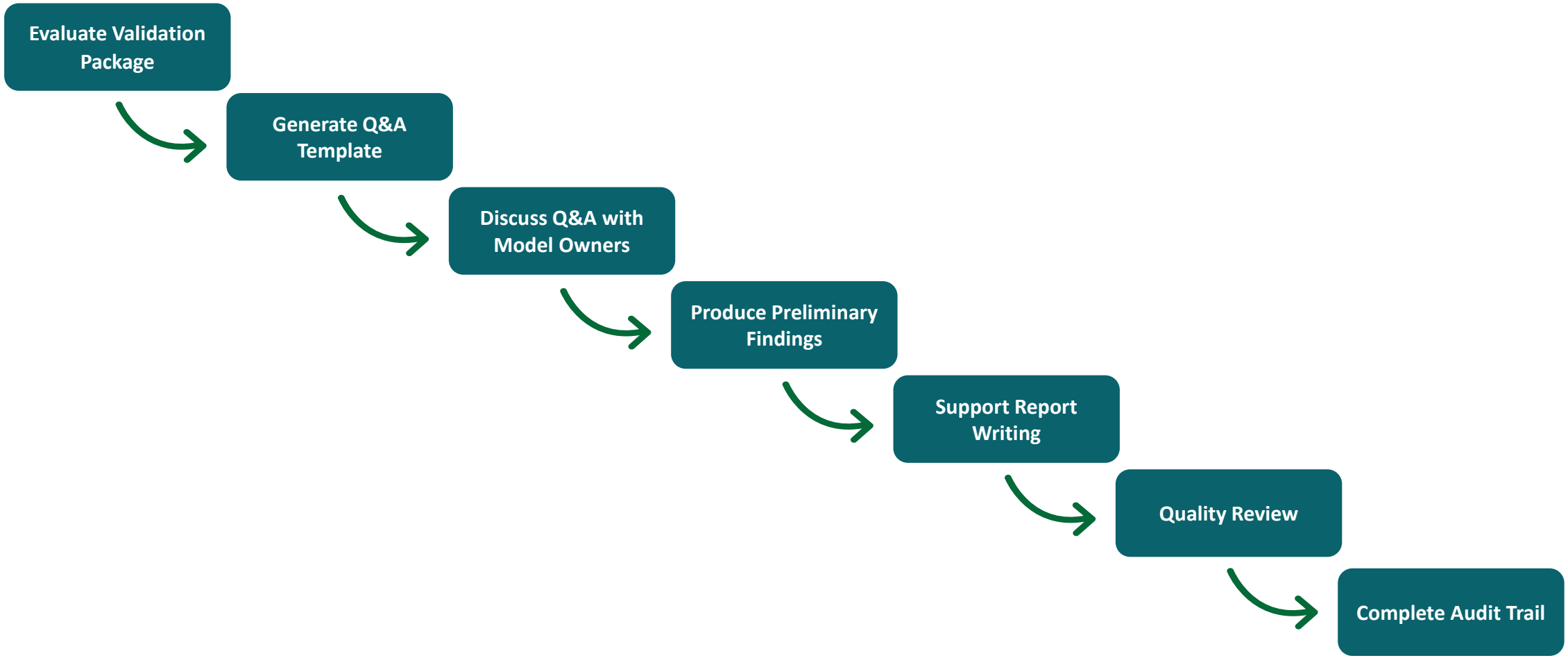
- GenAI work
- Manual work time remaining

Overview of Presentation

1. **Model Validation Process**
2. Project Approach
3. Solution Summary & Demo
4. Future Work

The Model Validation Process in a Nutshell

The model validation process consists of seven steps.



Impactful Opportunities for GenAI in the Model Validation Process

We identified several pain points at each step of the model validation process.

Model Validation Process

	Pain Points	GenAI Opportunities	Current Time Spend	Est. % Time Saved	Feasibility
Evaluate Validation Package	• **Lengthy evaluation period** due to **inefficient searches** through documents. • **Manual reviews hard** due to unclear document purposes and old documentation versions.				
Generate Q&A Template	• Performing validation activities on the model validation package to generate questions is time-consuming. • Inconsistent tracking questions. • Duplicates in question generation.				
Discuss Q&A with Model Owners	• Time-consuming preparation of presentations.				
Produce Preliminary Findings	• Findings are often very similar. • Time-consuming to find relevant prior findings and to create preliminary findings.				
Support Report Writing	• **Writing the general sections** of the report is time-consuming.				
Quality Review	• **Multiple reviews** need to be performed to achieve high quality-standard with clear, concise writing. • Part of these quality reviews are checks on e.g. proper introduction of terminology and correct referencing.				
Complete Audit Trail	• Difficulty tracing back findings and conclusions to the analysis and their original source.				

Impactful Opportunities for GenAI in the Model Validation Process

We identified opportunities for generative AI at each step of the model validation process.

Model Validation Process

	Pain Points	GenAI Opportunities	Current Time Spend	Est. % Time Saved	Feasibility
Evaluate Validation Package		• **Assisted checks** to ensure all required documents meet model validation standards and checklists.			
Generate Q&A Template		• Automatic generation of targeted draft questions based on client's model validation policy and standards. • Response analysis from Model Development.			
Discuss Q&A with Model Owners		• Standardised presentation based on Q&A, which can be used to discuss findings with relevant stakeholders (MD, reviewers, etc.).			
Produce Preliminary Findings		• Draft findings in line with writing style and guidance. • Content adaptation for multiple purposes (e.g.: short, medium and long description of findings).			
Support Report Writing		• **Draft creation of report sections** with a Large Language Model based on information in the model documentation and Q&A.			
Quality Review		• **Augment first editorial quality review** with AI.			
Complete Audit Trail		• Produce complete trails that can be audited, from input, requirements, challenge, conclusions, and output.			

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Project Approach

The project is divided into two phases, where phase 1 addressed solution design and the development and testing of the prompt library and phase 2 will deliver an automated workflow and application with user interface.

Completed

Next Phase

Phase 1

Solution Design

- Overview of ***business user and functional requirements*** for both prompt library and automated workflow.
- Determine the ***technical requirements*** for the use cases and ***assess the IT landscape*** to ensure compatibility with the desired generative AI solutions.

Develop & Test Prompt Flows

- ***A prompt library*** that consolidates the final prompts in a central repository with version control.
- Test prompts in ***small-scale pilots*** and collect feedback for further iteration.
- Define prompts in ***collaboration with end-users*** to design and tailor to each use case.

Phase 2

Develop & Test Automated Workflow

Develop an orchestrated workflow through Copilot Studio using Agentic AI.

Key Accelerators/Tools

We used our proven ***Generative AI use*** case incubator to facilitate a quick and structured solution design.

Deloitte's ***Headstart*** and ***CoPilot Work*** were leveraged to quickly write, test, and finetune prompts.

Deloitte's ***Trustworthy AI framework*** formed the basis for responsible implementation.

Existing client infrastructure and policies were used to accelerate development in line with client's standards.

User Experience

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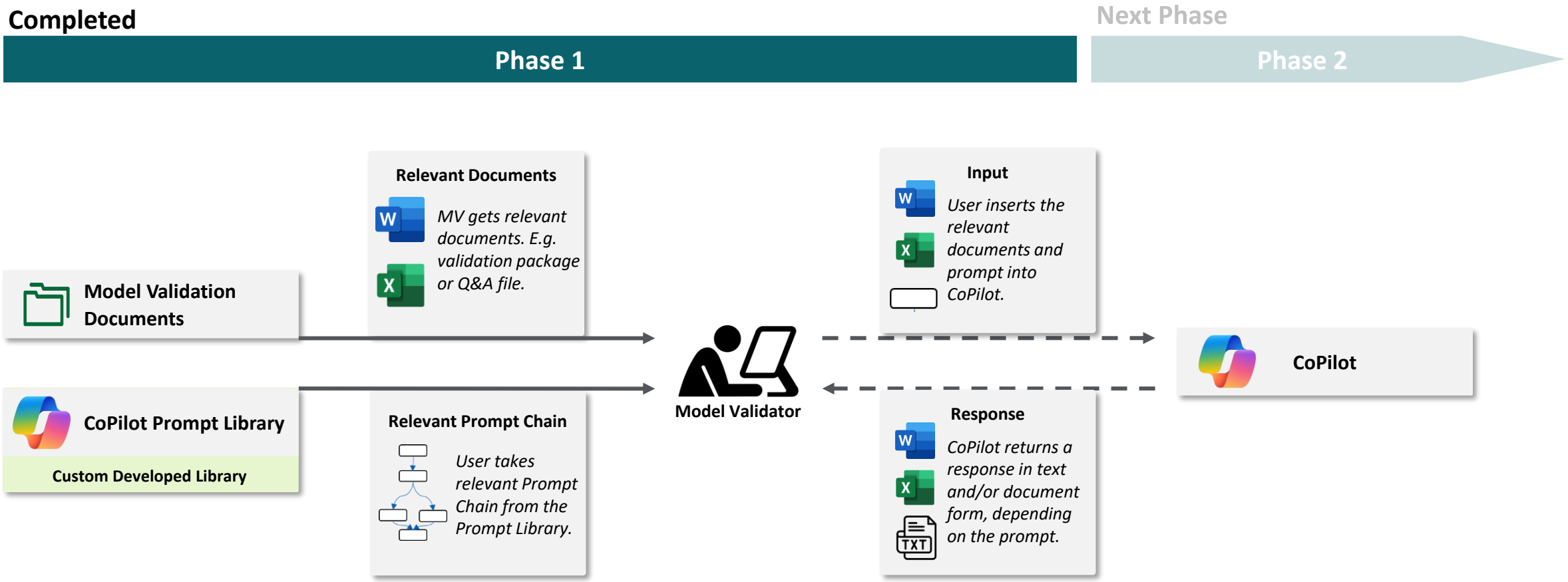

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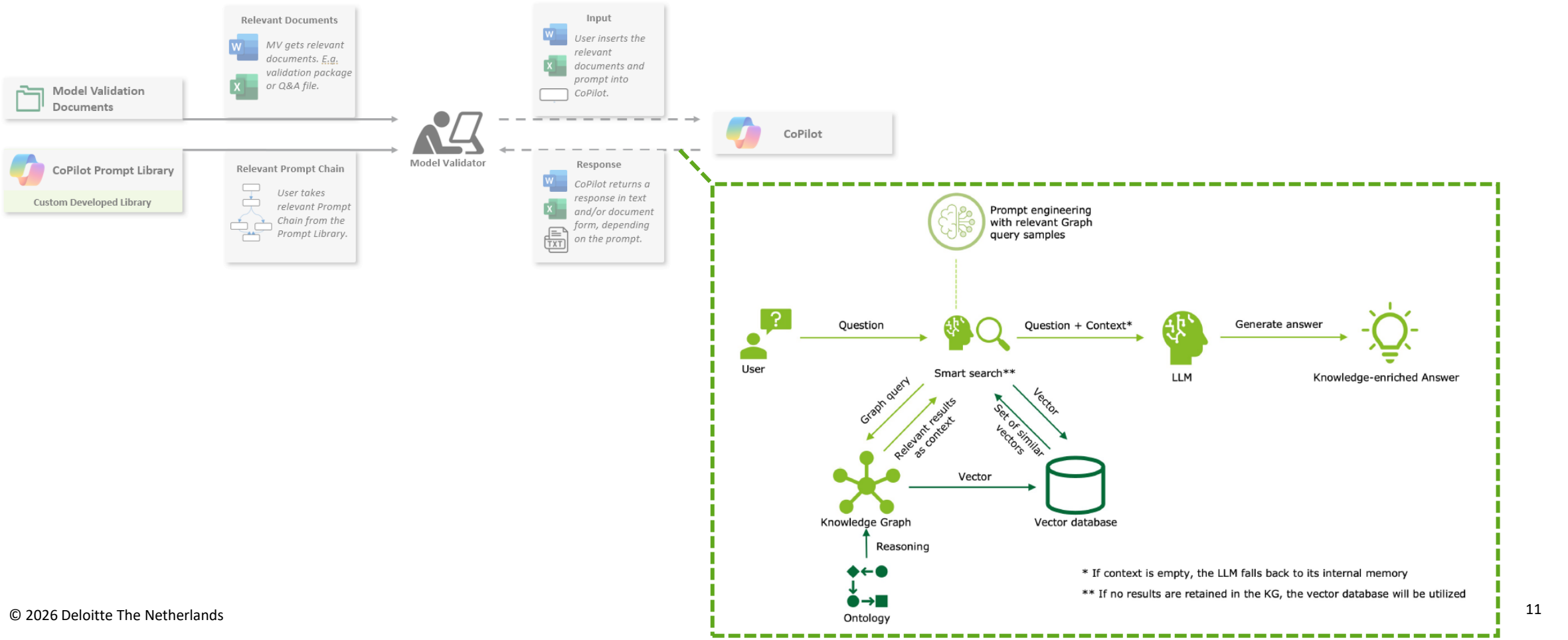
Next Phase

Phase 1 → **Phase 2**

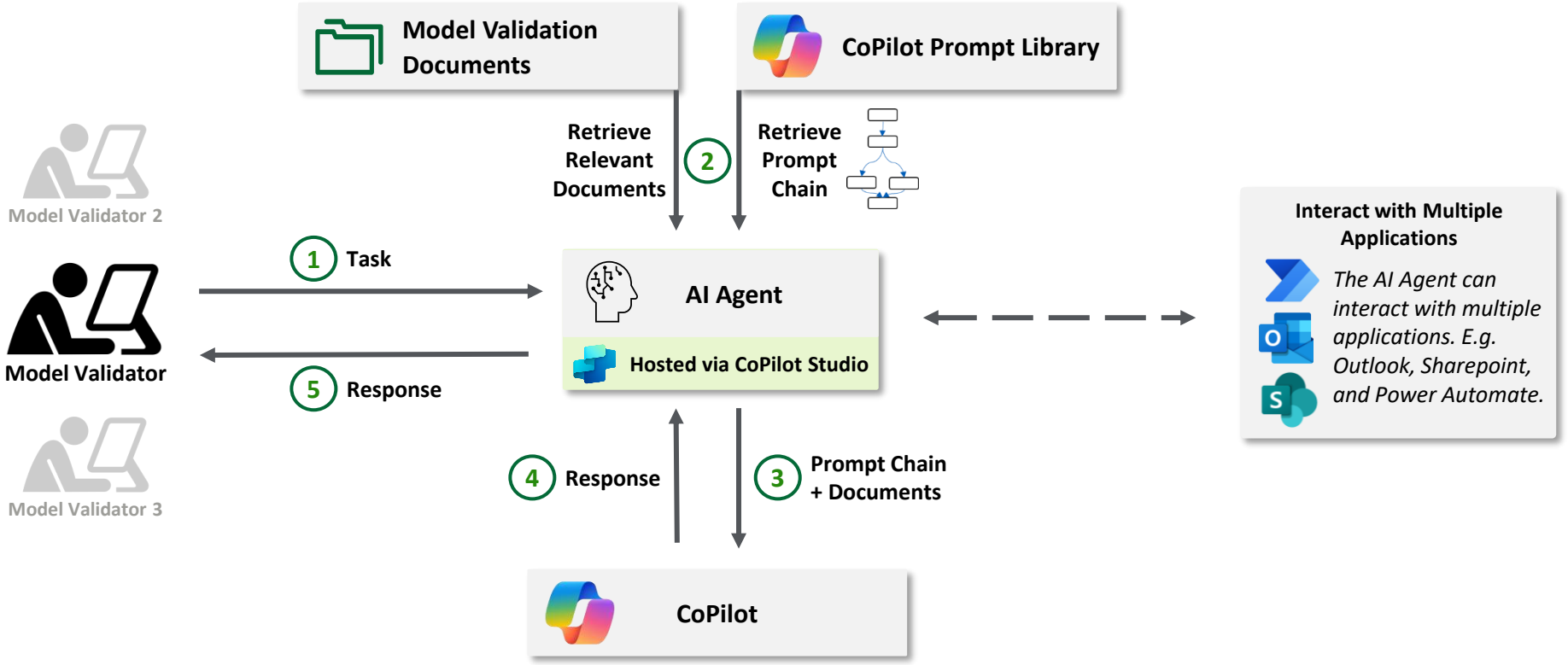


User Experience

The project is divided into two phases, where phase 1 addressed solution design and the development and testing of the prompt library and phase 2 will deliver an automated workflow.

Completed | Next Phase

Phase 1 | Phase 2



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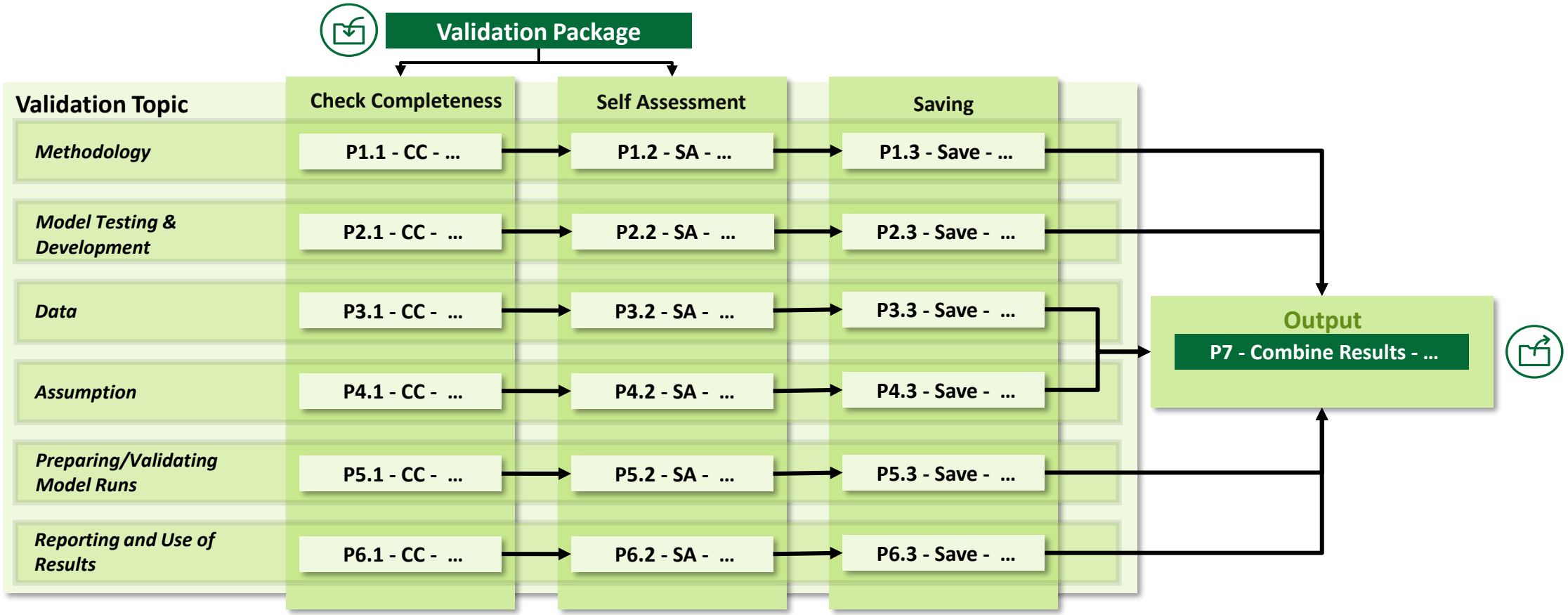
Package Evaluation Task Solution

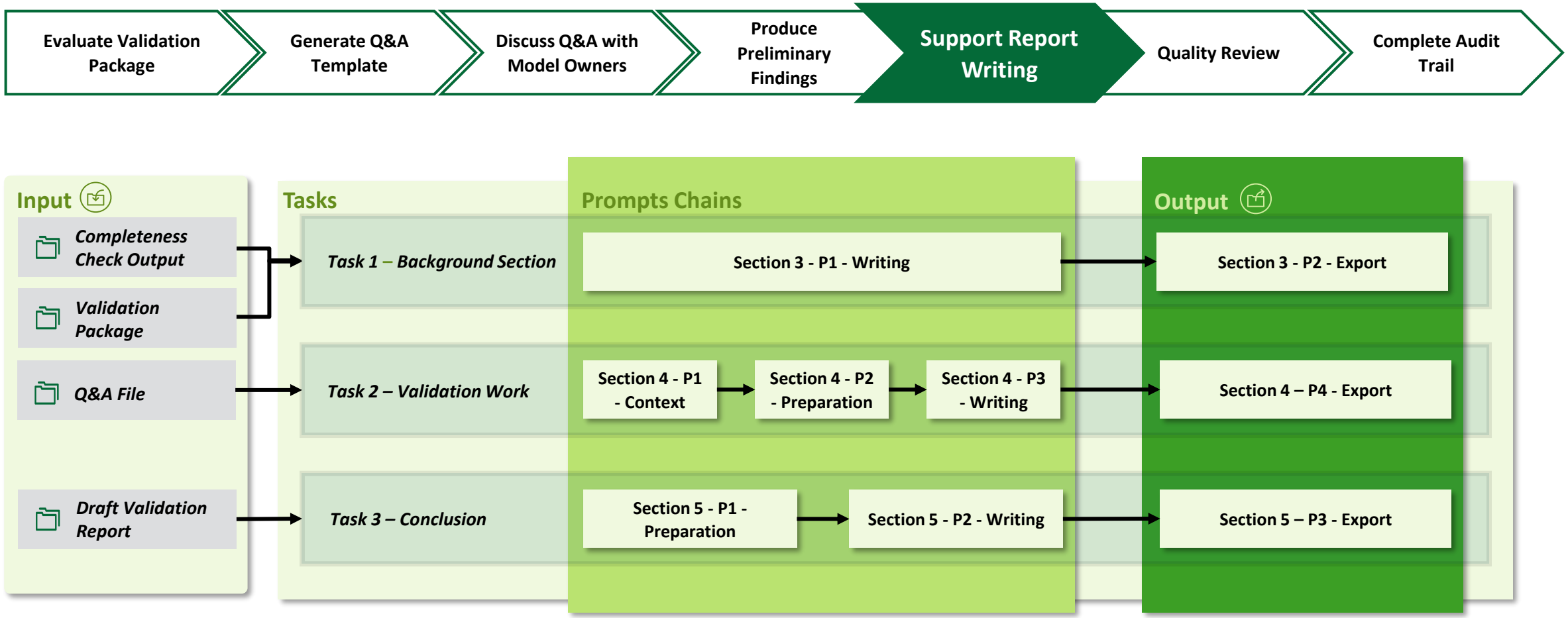
We asked Copilot to conduct a **completeness check** and to **fill the self-assessment questions** for each validation topic based on the linked Validation Package.

Evaluate Validation Package → Generate Q&A Template → Discuss Q&A with Model Owners → Produce Preliminary Findings → Support Report Writing → Quality Review → Complete Audit Trail



Report Writing Task Solution

We asked Copilot to write the **background** and **validation work sections** based on the linked Validation Package and the Q&A file. Furthermore, we asked CoPilot to write the **conclusion section** based on the validation report draft.



Live Demo

CoPilot: Step 5.2: Draft Findings Section in Report

Lessons Learned: challenges along the way

Several challenges were encountered whilst working with GenAI. Through practice resolving these obstacles, lessons were learned and we broadened our expertise.

1. **Image Processing Constraints**
   Copilot can read images in the context window but fails with embedded images in files, often missing key visual details like text or structure.

2. **Copilot Work Automation Limitations**
   LLMs struggle to follow multi-step instructions reliably. For workflow automation, you need to run different prompts one after the other. For automation, Copilot Studio or other agentic tools are needed.

3. **Visual Generation Challenges**
   Copilot can create diagrams but may choose illogical formats (e.g., webs instead of trees). PowerPoint Copilot lacks schematic capabilities; direct prompting works best.

4. **Prompt Development is Iterative**
   Achieving consistent output required comparing results to ground truth, refining prompts internally, and testing externally – prompt engineering takes time.

5. **Document Referencing Issues**
   Copilot Work sometimes pulls in documents outside the intended folder, leading to incorrect results. It also misses key files from the Validation Package. This can be solved through Copilot Studio.

6. **Corrupted Documents**
   Testers run into technical Copilot issues, like: Copilot cannot access files, believes files to be empty or corrupted, or stops generating responses. We developed a successful trouble-shoot approach.

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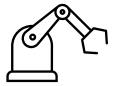
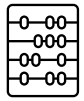
Future Work: from assistance to delegation

Agentic AI has access to tools, opening up the possibility to perform other tasks, including e.g. performing quantitative testing with shadow calculations in python.

	 **Traditional RPA** *Automating steps*	 **Classic ML/AI Models** *Augmenting human judgement*	 **Generative AI (LLM, Copilot)** *Assisting execution*	 **Agentic AI** *Delegating execution*
Machine	Follows a detailed script, with highly standardised inputs and outputs	Produces standardised scoring using a large number of inputs	Produces varied outputs based on human prompts, and contextual and enterprise data	Identifies, plans, and coordinates tasks to fulfil a goal- or utility function
Human steering	Execute process independently	Investigate results (e.g., anomalies)	Assist in process with human in the middle	Delegate process, intervene on exceptions or confirm proposed decisions
Human leverage				
Adoption by leaders	2005 - 2010	2010 - 2020	2022 - 2024	2024 -
Example Use Cases	Transaction Monitoring Alert Generation	Bias detection Credit risk decisioning Risk based pricing	Risk reporting Credit memo generation Client 360 risk dashboard	AI-driven risk scoring Smart KYC/onboarding Autonomous model validation

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