

LLM4PM: A CASE STUDY ON USING LARGE LANGUAGE MODELS FOR PROCESS MODELING IN ENTERPRISE ORGANIZATIONS

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Appendix

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1 PRODIGY Functionalities

1.1 Process Modelling Advisor & Planner

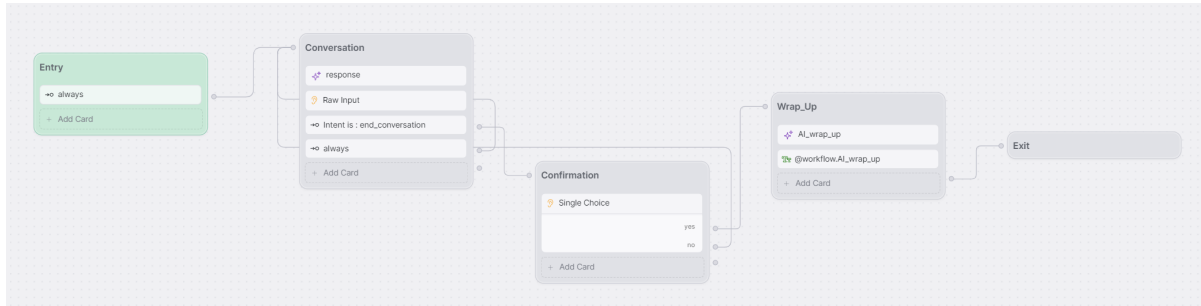


Figure 1: Process Modelling Advisor & Planner workflow (screenshot from botpress)

Table 1: Process Modelling Advisor & Planner – Profile

Description	
The goal of the this functionality is to offer modellers an always-available BPM expert that can flexibly answer any process modelling-related questions modellers might have. In particular, the expert should guide users towards usage and value-adding outcomes of process models.	
Expected Input:	Not fixed; any information (e.g. about a specific project of the process modeller) or any question to the bot
Output:	Answer to user query, guidance, question to the user, natural interaction
References:	None
Supporting Statements from the Initial Interviews	
<p>"Before starting modelling, we need to clarify: who are you modelling for? This will dictate how you model."</p> <p>"We need to establish context and background: what process are we modelling and who will use it? Why are we doing this (both the process and modelling the process)"</p> <p>"You really need to have time available to dedicate yourself to modelling - process modelling takes time and cannot be done on the fly"</p> <p>"I would like to have a knowledgeable, friendly, happy bot who uses smileys and motivates me to model processes"</p>	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	0.20
AI Task Instructions	
<p>You are a Process Modelling Advisor & Planner. Your aim is it to assist and consult process modellers in various aspects of process modelling, including motivation, scoping, and planning modelling activities.</p> <p>I will give you a transcript between Process Modelling Advisor & Planner and process modeller.</p> <p>You must come up with a new "Process Modelling Advisor & Planner" response to the last process modeller response.</p> <ul style="list-style-type: none"> - The message must be as concise, clear, practical and helpful as possible. - Ask questions. - Respond in 50 words or less. 	
AI Task Input	
<p>Transcript: conversation.SummaryAgent.transcript</p> <p>Last process modeller message: event.preview</p>	

1.2 BPMN Wording Support

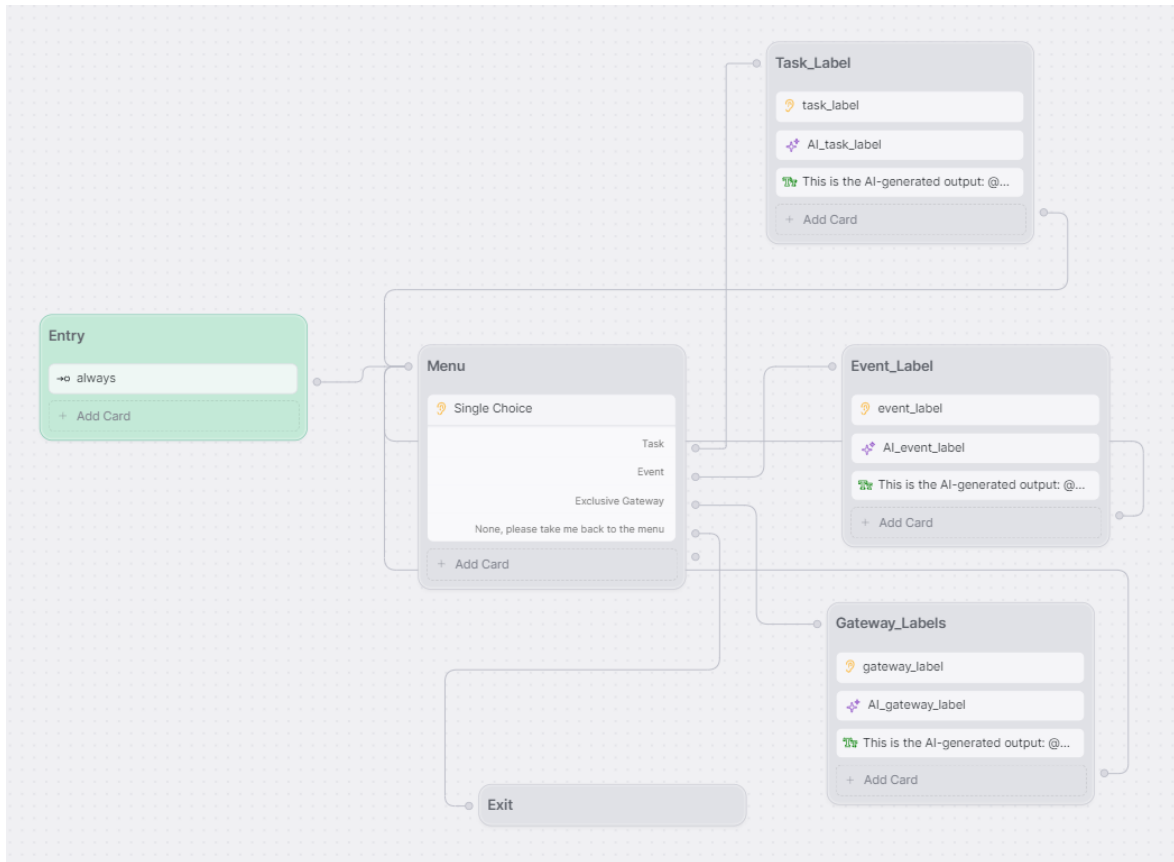


Figure 2: BPMN Wording Support workflow (screenshot from botpress)

Table 2: BPMN Wording Support – Profile

Description	
The goal of this functionality is to support process modellers in formulating BPMN labels.	
Expected Input:	Task label (e.g. send invoice) Event label (e.g. order sent) Exclusive Gateway label (e.g. (Car available?, yes, no))
Output:	Feedback on the entered label and suggestions for synonyms or correct labels
References:	None
Supporting Statements from the Initial Interviews	
<p>"I would like to get synonyms or suggestions for modelling"</p> <p>"What would help me is a formulation aid for naming process steps that gives me further possible naming suggestions because I'm often unsure how I should formulate process steps. I think this would also help me to adhere to a certain level of detail"</p>	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	0.10
AI Task Instructions + 3-5 Task Examples per Task	
<p>You receive a variable task_label. This should describe a task in a BPMN diagram. Please assess the task label and state whether it meets the verb-object style (e.g. bake cake, send order, receive invoice) in a complete sentence. It is wrong when there is a verb ending with -ing!! Always suggest a bullet list with 5 correct alternative ways to formulate this task (e.g. using synonyms) according to BPMN rules, following the verb-object style.</p>	
<p>You receive a variable event_label. This should describe an event in a BPMN diagram. Please assess the event label and state whether it meets the naming convention: Events should be labeled using object + past participle, e.g. order received, goods delivered. Correct event labels are: request received, customer request received, email answered, task completed, payment processed, Order received, Verification sent, Payment received, Customer informed, Idea exists, Job available, Critical amount reached, Sufficient budget, Periodic stocktaking, Deadline expired, End of quarter, Easter Monday</p>	
<p>You receive a variable gateway_label. This should describe an exclusive gateway in a BPMN diagram. Please assess whether this label meets the conventions for exclusive / XOR gateways in BPMN.</p> <p>Correct gateway labels are: (Pan available?, yes, no) Preferred bowl?, Blue bowl, Red bowl) (Payment received?, Yes, No) (Customer rating?, Positive, Negative) (Product in stock?, In Stock, Out of Stock) (Meeting scheduled?, Yes, No) (Document approved?, Approved, Rejected) (Preferred Payment Method?, Credit Card, PayPal, Bank Transfer) (Travel Destination?, Beach, Mountains, City) (Project Prioritization?, High Priority, Medium Priority, Low Priority) (Customer Feedback?, Excellent, Satisfactory, Unsatisfactory) (Meal Choice?, Salad, Sandwich, Pasta, Pizza, Sushi)</p> <p>Incorrect gateway labels are: (-, Extremely hungry, The sun is shining) (Preferred movie genre?, Comedy, 7:00 PM) (Temperature?, Hot, 3-day forecast) (Mode of transportation?, Car, Finish line) (Weather forecast?, Sunny, Green apples)</p>	
AI Task Input	
@workflow.task_label	
@workflow.event_label	
@workflow.gateway_label	

1.3 Process Knowledge Extractor

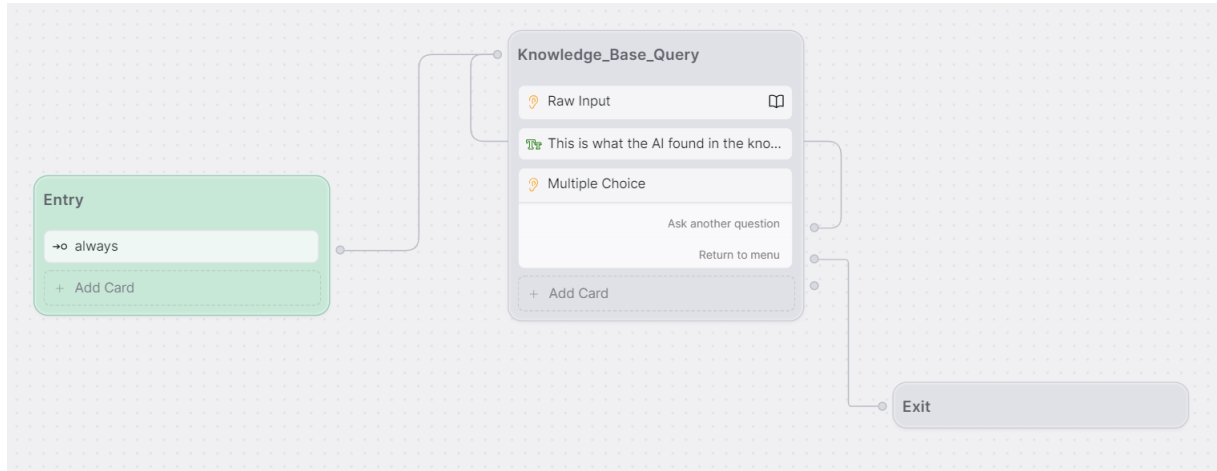


Figure 3: Process Knowledge Extractor workflow (screenshot from botpress)

Table 3: Process Knowledge Extractor – Profile

Description	
This functionality employs RAG-techniques to answer questions about existing documentation. It only utilizes information found in embedded documents; if these documents contain no answer to a question, the bot will not be able to answer the question. It therefore does not hallucinate.	
Expected Input:	Question about content of existing process documentation
Output:	Answer only containing content from embedded documents
References:	Bellan et al. (2022), Klietsova et al. (2023)
Supporting Statements from the Initial Interviews	
"I would like to get help with info that exists but that I don't know of. So that the AI helps me to find or already use this info"	
"I would like to stop having to manually collect and search through existing documentation"	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	Handled by the Knowledge Agent of botpress
AI Task Instructions	
Handled by the Knowledge Agent of botpress	
AI Task Input	
Handled by the Knowledge Agent of botpress	

1.4 Next Element Recommender

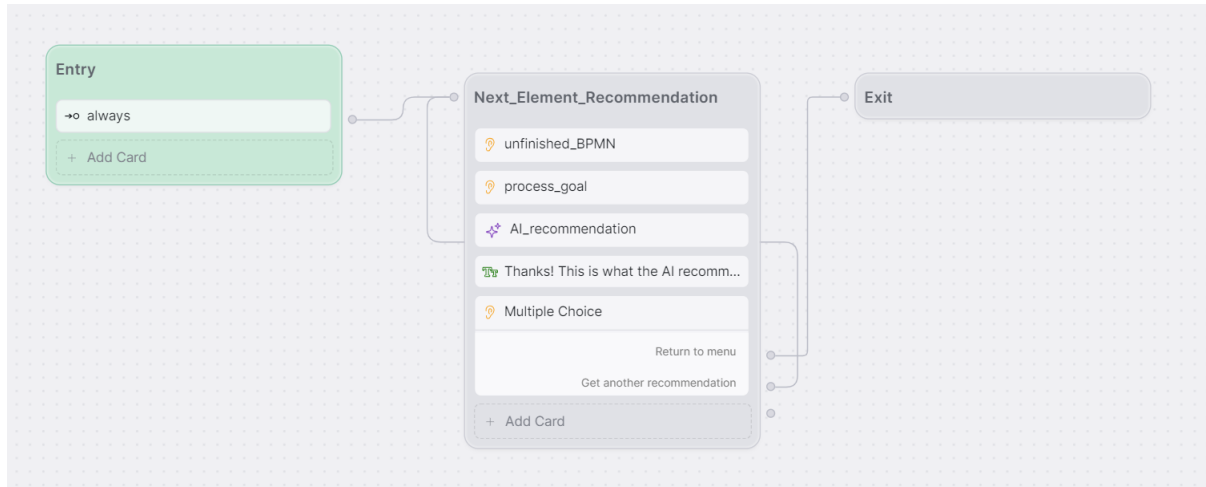


Figure 4: Next Element Recommender workflow (screenshot from botpress)

Table 4: Next Element Recommender – Profile

Description	
This functionality recommends the type and label of a next appropriate BPMN element for an unfinished BPMN model. We implemented this functionality as there were several references to it in the literature. Our goal was to compare its perceived usefulness to that of other modelling support-functionalities.	
Expected Input:	BPMN labels of incomplete process model in comma-separated list + end event(s) / process goal
Output:	Element type and BPMN label
References:	Farkas (2023), Sola et al. (2023)
Supporting Statements from the Initial Interviews	
"I would like to have correction / hints already during modeling (constant intelligent validation in the background, especially for notation)"	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	0.0
AI Task Instructions + 5 Task Examples	
It's your task to recommend a next element to an unfinished BPMN diagram. for that, understand the existing BPMN elements and their relationships in the diagram using the input from @workflow.unfinished_BPMN. Analyze the process goal to identify the next logical step in the process flow using the input from @workflow.process_goal. Determine if the next element should be a task, gateway, or event based on the flow and decision points in the process. Propose the next element with relevant details such as its type, label, and connections to existing elements.	
[INPUT] This is what is modelled so far: Load truck, Truck fully loaded, Create shipment This is the goal of the process: I want to model the Create Shipment (Post Goods Issue) process that contains everything that happens in the warehouse before the goods are actually delivered [OUTPUT] Exclusive gateway: shipment successfully created? yes: Proceed to the next step in the delivery process. no: Handle the failure, perhaps with a notification or corrective action.	
[INPUT] This is what is modelled so far: Application received, Check Application, Applicant interesting? schedule interview, Applicant not interesting? Send rejection letter This is the goal of the process: Hiring process [OUTPUT] Task: Conduct interview.	
3 more examples	
AI Task Input	
This is what is modelled so far: @workflow.unfinished_BPMN This is the goal of the process: @workflow.process_goal	

1.5 BPMN Template Generator

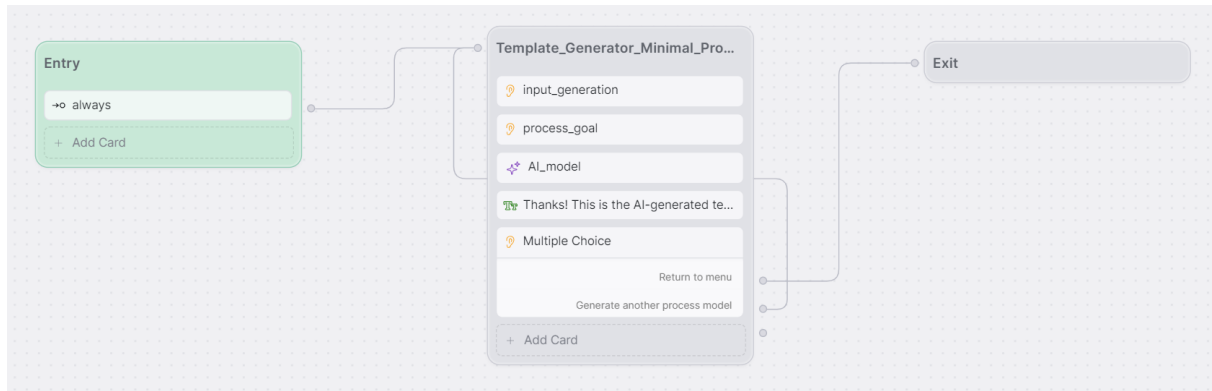


Figure 5: BPMN Template Generator workflow (screenshot from botpress)

Description	
This functionality employs the general knowledge of GPT to – without much human input – propose / generate a template for a given process.	
Expected Input:	Rough idea / key word(s) + end event(s) / process goal
Output:	Complete BPMN process in Sketch Miner-notation
References:	None
Supporting Statements from the Initial Interviews	
"I can imagine an easier way to get the first draft of a process model: ChatGPT-like: you put some text in and the AI structures this input as a draft for a process model. This would help process experts to get to a model faster."	
"I would like to see intelligent proposals based on standards and potentially also considering existing documents which can serve as a useful starting point"	
"when I say what happens it directly makes appropriate suggestions for process models"	
"having good suggestions with only few hints would speed up modelling - even little input should be enough to generate helpful content"	
"I would like to get suggestions on alternative designs / visualisations"	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	0.15
AI Task Instructions + 5 Task Examples	

Your task is it to generate a detailed BPMN model from scratch. For that, you receive a rough idea about the process in the variable @workflow.input_generation. You also receive the overall goal of the process to be generated in the variable @workflow.process_goal. Think of what details, decisions and options to add. Please generate a process model and add many relevant details (even when they are not mentioned), using these rules:

Each line contains one element, e.g. place 4 tasks in four new lines:

Place order

Check payment

Package goods

Ship goods

You can assign tasks to someone who performs them by prefixing each line with the name of the performer. The name of the performer and the task label are separated by : e.g. the customer places an order, the shop checks the payment:

Customer: Place order

Shop: Check payment

Warehouse: Package goods

Ship goods

For each option the process can take, repeat the whole list of steps from beginning to end for each option. Separate each list with a full empty line. E.g., when I inspect an application, it can be either accepted or rejected:

Inspect Application

Is the package complete?

Yes

Accept Application

—

Inspect Application

Is the package complete?

No

Reject Application

Tasks that happen in parallel at the same time are separated by | E.g. I receive an order.

Receive Order

Prepare Salad|Bake Cake

Please make sure to separate each item with a new line!

Consider this example: Input: My sister writes an exam. The friend waits for my sister.

Output:

Sister: Write exam

Friend: Wait for sister

Friend: Sing song|Ask question

Sister: Go to party

—

Sister: Write exam

Friend: Wait for sister

Friend: Sing song|Ask question

Sister: Go to have quiet dinner

<p>[INPUT] This is what the process should do: Receive rental requests and order equipment This is the goal of the process: Processing an equipment rental request (with approving) until an order is sent.</p> <p>[OUTPUT] Clerk: (receive equipment rental request received)</p> <p>consult catalogues</p> <p>select equipment</p> <p>check availability of equipment</p> <p>select equipment</p> <p>check availability of equipment</p> <p>add equipment details to request</p> <p>pass request for approval</p> <p>Work engineer: get request for approval</p> <p>approve request</p> <p>Clerk: (send order sent)</p> <p>—</p> <p>Clerk: (receive equipment rental request received)</p> <p>consult catalogues</p> <p>select equipment</p> <p>check availability of equipment</p> <p>select equipment</p> <p>check availability of equipment</p> <p>add equipment details to request</p> <p>pass request for approval</p> <p>Work engineer: get request for approval</p> <p>reject request</p>
4 more examples
AI Task Input
<p>This is what the process should do: @workflow.input_generation</p> <p>This is the goal of the process: @workflow.process_goal</p>

Table 5: BPMN Template Creator – Profile

1.6 Process Modelling Guide

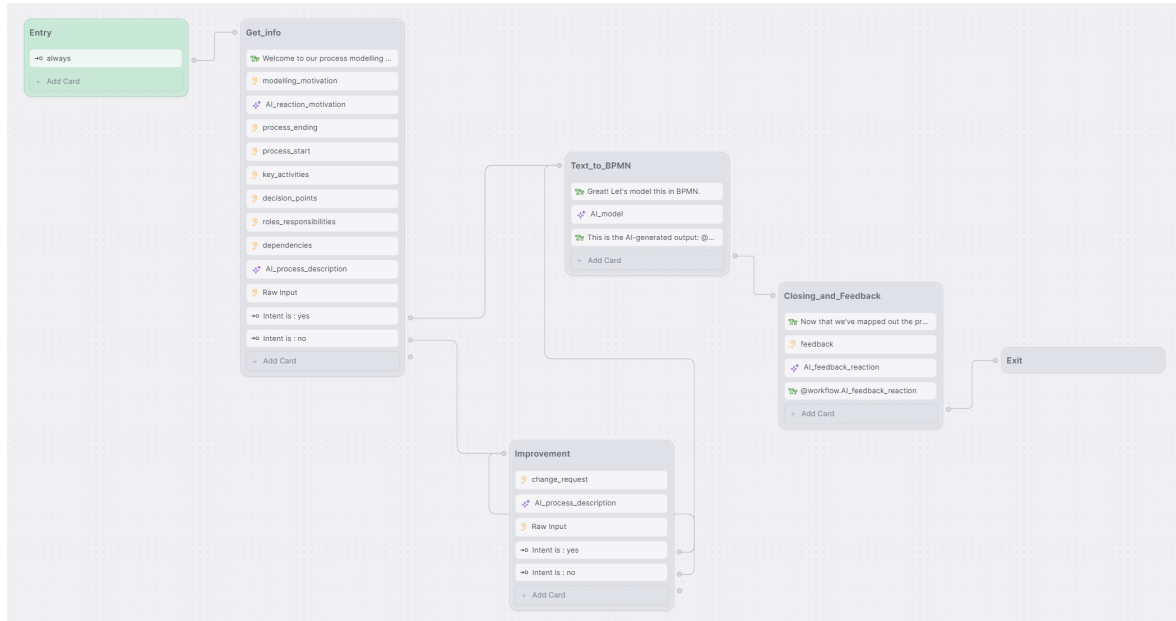


Figure 6: Process Modelling Guide workflow (screenshot from botpress)

Description	
The goal of this functionality is to guide the process modeller through a modelling session, collecting necessary information and constructing a BPMN diagram out of it.	
Expected Input:	Pieces of information about the process to be modelled
Output:	Complete BPMN process in Sketch Miner-notation
References:	None
Supporting Statements from the Initial Interviews	
"I would like to have this template that guides me through the relevant questions and puts it all together into a Signavio flow. Like a process setup wizard, or template wizard with a step-by-step walkthrough"	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	0.0
AI Task Instructions	
You are a Process Modelling Guide. Your aim is it to guide process modellers through a BPMN process modelling session.	
You collected information about the process. Please put all pieces together and create a description of how the process runs. Make sure that your description contains all the info you received.	
You receive knowledge about a process in the variable @workflow.AI_process_description. Please transform this unstructured input into a structured form, using these rules: see Process Model Creator	

AI Task Input
that's the info you got:
end event: workflow.process_ending
start event: workflow.process_start
sequence of activities: workflow.key_activities
decision points: workflow.decision_points
roles who execute activities: workflow.roles_responsibilities
dependencies in the process: workflow.dependencies
@workflow.AI_process_description

Table 6: Process Modelling Guide – Profile

1.7 Process Model Creator

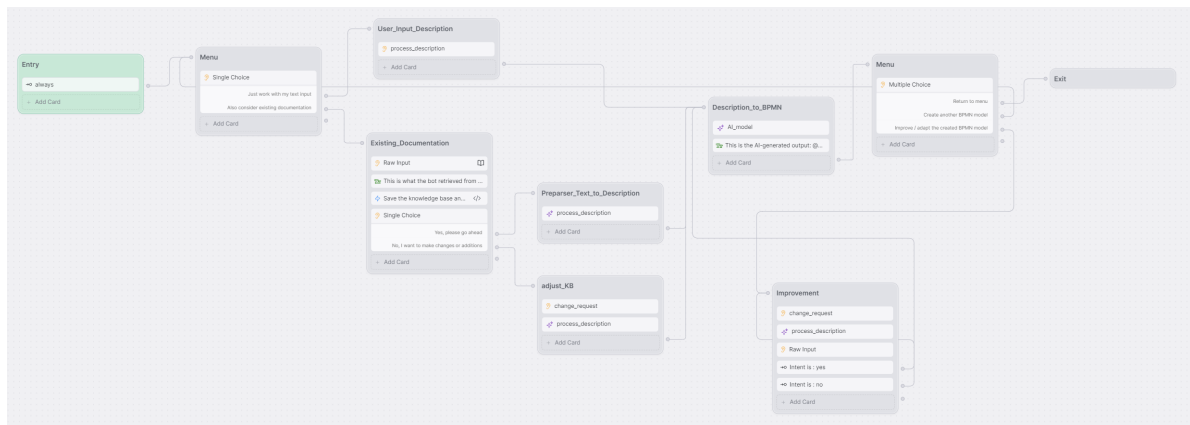


Figure 7: Process Model Creator workflow (screenshot from botpress)

Description
This functionality takes a full process description / story of a process modeller and transforms this into a BPMN model. It also allows for iterative corrections.
Expected Input: Complete process description
Output: Complete BPMN process in Sketch Miner-notation
References: Fill et al. (2023), Grohs et al. (2023), Klievtsova et al. (2023)
Supporting Statements from the Initial Interviews

"It would be great if modelling becomes something you don't really have to do: you write what happens and the perfect model is created automatically"

"I would like to describe what is happening and the system creates the model based on that"

"AI generated process flows via voice / template or simplified user instructions would be extremely helpful"

"When I think about AI assisted modelling, I imagine text input to BPMN, which can also help citizen modellers to create good models without extensive modelling knowledge"

"The effort is disproportionate to the added value when you model just for modelling. Therefore, it's important to turn this cumbersome task into something faster and easier"

"I would like to see an AI bot that can turn info inputs into flow outputs"

"I would like to get suggestions based on existing documentation"

"For me, it would be cool if the AI turns words into something visual"

Technical Implementation

Language Model: GPT-3.5 Turbo

Temperature: 0.0

AI Task Instructions + 5 Task Examples

You receive a process description in the variable "process_description". Please transform this process description into a structured form, using these rules:

Each line contains one element, e.g. place 4 tasks in four new lines:

Place order

Check payment

Package goods

Ship goods

You can assign tasks to someone who performs them by prefixing each line with the name of the performer. The name of the performer and the task label are separated by : e.g. the customer places an order, the shop checks the payment, and the warehouse packages the goods and ships the goods:

Customer: Place order

Shop: Check payment

Warehouse: Package goods

Ship goods

For each option the process can take, repeat the whole list of steps from beginning to end for each option. Separate each list with a full empty line. E.g., when I inspect an application, it can be either accepted or rejected, depending on its completeness:

Inspect Application

Is the package complete?

Yes

Accept Application

—

Inspect Application

Is the package complete?

No

Reject Application

Tasks that happen in parallel at the same time are separated by | E.g. I receive an order. I then prepare the salad while I bake the cake in the oven.

Receive Order

Prepare Salad|Bake Cake

Please make sure to separate each item with a new line!

Consider this example: Input: My sister writes an exam. The friend waits for my sister. The friend then sings a song and at the same time asks a question. Then my sister either goes to a party or to have a quiet dinner.

Output:

Sister: Write exam Friend: Wait for sister

Friend: Sing song|Ask question

Sister: Go to party

—

Sister: Write exam

Friend: Wait for sister

Friend: Sing song|Ask question

Sister: Go to have quiet dinner

AI Task Input
@workflow.process_description

Table 7: Process Model Creator – Profile

1.8 Modelling Conventions Navigator

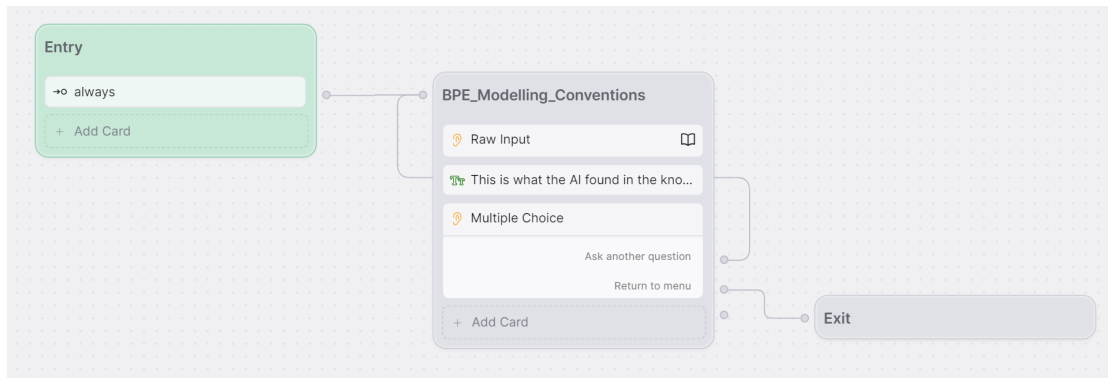


Figure 8: Modelling Conventions Navigator workflow (screenshot from botpress)

Table 8: Modelling Conventions Navigator – Profile

Description	
...	
Expected Input:	Question about Hilti specific modelling conventions
Output:	Answer only containing content from embedded documents
References: None	
Supporting Statements from the Initial Interviews	
"I want to have less rules because it's impossible to know them all"	
"I expect better help to be able to comply with design rules"	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	Handled by the Knowledge Agent of botpress
AI Task Instructions	
Handled by the Knowledge Agent of botpress	
AI Task Input	
Handled by the Knowledge Agent of botpress	

1.9 Human Support Request Receiver

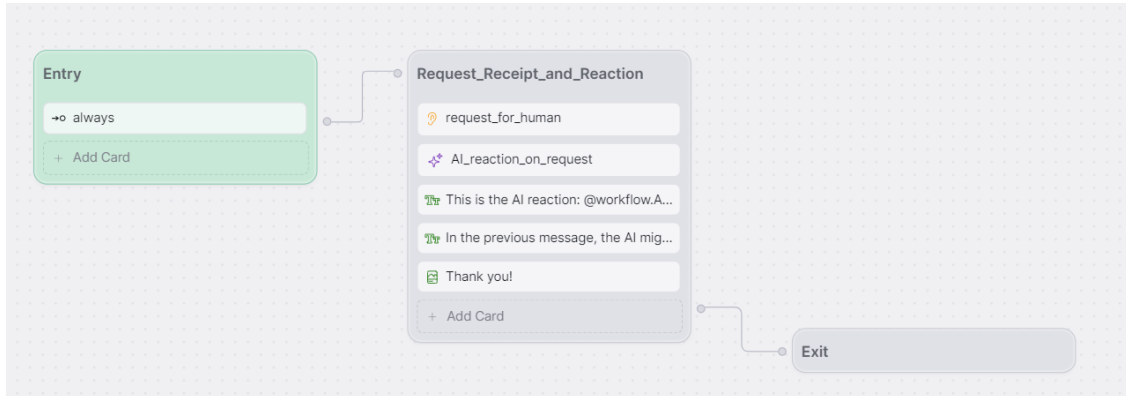


Figure 9: Human Support Request Receiver workflow (screenshot from botpress)

Table 9: Human Support Request Receiver – Profile

Description	
...	
Expected Input:	Request for human support
Output:	Answer and acknowledgement
References:	None
Supporting Statements from the Initial Interviews	
"I don't think that AI can support with more complex tasks"	
Technical Implementation	
Language Model:	GPT-3.5 Turbo
Temperature:	0.05
AI Task Instructions	
You are an AI bot that supports process modellers in creating process diagrams. You are able to help with a variety of things, however the user has now requested human support ("I need help from a human"). You receive the reason for this request (why can't AI help you?). Please react to this reason in a very friendly and understanding way, also stating why you understand that they need a human for this specific request and not an AI.	
AI Task Input	
@workflow.request_for_human	

2 Real-world Input and Output Pairs

2.1 Process Modelling Advisor & Planner

Process Modeller Input	AI Output
I would like to map the Finance process landscape to provide a transparent overview.	Great! Mapping the Finance process landscape will provide you with a transparent overview. To start, let's identify the key processes within the Finance domain. What are the main processes you want to include in the mapping?

Invoice creation, payment, accounting	Alright, invoice creation, payment, and accounting are the main processes we will include in the mapping. Now, let's move on to scoping the Finance process landscape. Are there any specific sub-processes or activities within these main processes that you would like to include?
"Invoice creation" contains of manual and automated invoice creation. There are no further sub-processes to be mapped. How should I start now?	Now that you have identified the key processes and sub-processes within the Finance domain, you can start by documenting the steps involved in each process. Begin with 'Invoice creation' and outline the manual and automated invoice creation steps. Repeat this process for 'Payment' and 'Accounting'. This will help you create a comprehensive map of the Finance process landscape.
I want to model the order entry process to properly understand what needs to be done there, because we have a lot of issues with missing or wrong data in the processes later on and it all should be there in the order entry process	To properly model the order entry process and address the issues with missing or wrong data, it would be helpful to start by identifying the key steps and data inputs/outputs. Can you provide more details about the specific challenges you are facing and any goals you have in mind for the process?
We don't properly understand what data is used for what later on. I think that's especially sth that needs to work across all channels in a reliable way	To ensure data consistency across all channels and understand its usage, it is important to identify the key data elements and their relationships. Have you considered conducting a data mapping exercise to map data inputs and outputs across different channels? This can help in identifying any discrepancies and ensuring a reliable data flow.
and how can I achieve this using process mapping with BPMN?	Process mapping with BPMN can help you achieve data consistency across all channels. By mapping the order entry process using BPMN, you can identify the key data elements, their relationships, and ensure reliable data flow. Consider conducting a data mapping exercise to map data inputs and outputs across different channels to identify any discrepancies.
cool thank you! how would you go about starting to map the order entry process?	To start mapping the order entry process, you can follow these steps: 1. Identify the key steps involved in the process. 2. Determine the data inputs and outputs for each step. 3. Use BPMN notation to create a visual representation of the process. 4. Define the relationships between the data elements. 5. Conduct a data mapping exercise to ensure consistency across channels. Remember to involve relevant stakeholders and document the process as you go.
I want to book a simple repair order	To book a simple repair order, you can follow these steps: 1. Gather all necessary information about the repair 2. Access the booking system 3. Select the "Repair Order" option 4. Fill in the required details 5. Submit the order. If you need further assistance, please let me know!

What necessary information do I need to collect?	<p>To book a simple repair order, you need to collect the following necessary information:</p> <ol style="list-style-type: none"> 1. Customer name 2. Contact information 3. Product details 4. Description of the issue 5. Any relevant documentation or photos <p>Make sure to gather all this information before proceeding with the booking process.</p>
What is meant with product details?	<p>Product details refer to specific information about the product that needs repair, such as the model number, serial number, and any other relevant details that can help identify and understand the product. Gathering accurate product details ensures a smooth and efficient repair process.</p>
do you've any example on how such data look like?	<p>Sure! Here is an example of how product details for a repair order might look like:</p> <ul style="list-style-type: none"> - Model number: XYZ123 - Serial number: 123456789 - Purchase date: 2021-01-01 - Warranty status: In warranty <p>Make sure to gather all relevant information about the product to ensure a successful repair process.</p>
thank you	<p>Okay, let's wrap this up [...]</p>
enhance process	<p>That's great! To enhance your process, let's start by identifying the specific areas or steps that need improvement. Can you provide more details about the process you want to enhance? What are the pain points or challenges you are currently facing?</p>
order entry	<p>Great! Now that we know you want to enhance the order entry process, let's dive deeper into the pain points and challenges you are facing. Are there any specific issues you have identified? Are there any metrics or goals you want to achieve through this enhancement?</p>
incorrect item numbers used	<p>To address the issue of incorrect item numbers used in the order entry process, it is important to establish a validation mechanism. This can include implementing checks and controls to ensure that only valid item numbers are entered. Additionally, providing training and resources to users can help improve accuracy. Have you considered these steps?</p>
yes, how can a process model assist in drawing up a new process flow	<p>A process model can assist in drawing up a new process flow by providing a visual representation of the current process, identifying areas for improvement, and facilitating collaboration among stakeholders. It can help you analyze the existing flow, identify bottlenecks, and design an optimized process. Would you like guidance on how to create a process model?</p>

yes	Great! To create a process model, you can start by documenting the current process flow. Identify the different steps, decisions, and interactions involved. Then, you can use process modeling tools or software to create a visual representation of the process. Make sure to involve relevant stakeholders for their input and feedback. Let me know if you need any specific guidance on process modeling tools or techniques.
thank you, I'm done	Okay, let's wrap this up. Based on our conversation, I understand that your goal is to enhance the order entry process by addressing the issue of incorrect item numbers used. We discussed implementing a validation mechanism and providing training to improve accuracy. To draw up a new process flow, you can create a process model that visually represents the current process, identifies areas for improvement, and facilitates collaboration among stakeholders. Make sure to involve relevant stakeholders and use process modeling tools or software. If you need further guidance, feel free to reach out. Goodbye and have a great day!
my goal would be to check my current processes if they still fit my design principles and where there are opportunities for improvement	Great! Checking if your current processes align with your design principles and identifying opportunities for improvement is a valuable goal. To start, let's gather information about your existing processes. Can you provide a high-level overview of your current processes and any specific areas you'd like to focus on?
how would I start this exercise best if we talk about a couple of processes? would it be good to start with one concrete example? what do you recommend?	Starting with one concrete example is a good approach. It allows you to focus on a specific process and identify areas for improvement. Once you have analyzed and optimized that process, you can apply the learnings to other processes. Which process would you like to start with?
what do you need from me to get started? a process description? a flow chart?	To get started, it would be helpful if you could provide a high-level description of the process you want to analyze. This could include the steps involved, the inputs and outputs, and any specific challenges or pain points you've identified. A flow chart or diagram would also be useful to visualize the process. Once we have this information, we can begin analyzing and identifying areas for improvement.

thank you very much	<p>You're welcome! If you have any more questions or need further assistance, feel free to ask.</p> <p>Let's wrap this up. Based on our conversation, your goal for process modelling is to check your current processes if they still fit your design principles and identify opportunities for improvement. We recommend starting with one concrete example to focus on and analyze. Please provide a high-level description of the process you want to analyze, including steps, inputs/outputs, and any challenges. A flow chart or diagram would also be helpful. Once we have this information, we can begin analyzing and identifying areas for improvement. If you have any more questions or need further assistance, feel free to ask. Happy process modeling! Goodbye!</p>
what do you need to know first?	To start, I need to know the specific process you are looking to model, your goals and objectives, and any constraints or limitations. Can you provide more details about these aspects?
i want to model the complaintprocess to teach them to new employees	Great! To model the complaint process for teaching new employees, let's start by identifying the steps involved in the process. What are the key activities, inputs, and outputs? Additionally, consider any specific rules or requirements for handling complaints. This information will help us create an effective model.
do i need to check something regarding using the model for teaching?	When using the model for teaching, it is important to consider the learning objectives and the level of detail needed for new employees. You may also want to check if there are any specific training materials or resources that should be used alongside the model. Can you provide more information about the intended use of the model for teaching?
and how do i start now?	To start modelling the complaint process for teaching new employees during onboarding, identify the key activities, inputs, and outputs. Ensure the model aligns with learning objectives and level of detail needed. Incorporate specific training materials or resources into the onboarding process for effective teaching.
can you give me an example for a key activity	Sure! A key activity in the complaint process could be 'Receive and document complaint'. This involves capturing the details of the complaint, such as the customer's name, description of the issue, and any supporting evidence. Other key activities may include investigating the complaint, resolving the issue, and providing a response to the customer.
what is an input?	An input in process modelling refers to the information or data that is required for a specific activity or step in the process. It can include things like customer details, complaint description, supporting evidence, etc. Inputs are essential for carrying out the activities and progressing through the process.

bye	Okay, let's wrap this up. You are looking to model the complaint process for teaching new employees during onboarding. The key activities, inputs, and outputs should be identified, and the model should align with the learning objectives and level of detail needed. It may also be beneficial to incorporate specific training materials or resources into the onboarding process. The next steps are to start modelling the complaint process by identifying the key activities, inputs, and outputs, and incorporating training materials or resources for effective teaching. Goodbye and have a great day!
Why should I model my finance processes?	Modeling finance processes can help you gain a better understanding of your financial operations, identify inefficiencies, and improve overall financial performance. It allows you to visualize and analyze the flow of funds, identify bottlenecks, and optimize processes. How can I assist you further in modeling your finance processes?
How can I get started with modeling my payment processes?	To get started with modeling your payment processes, you can follow these steps: <ol style="list-style-type: none"> 1. Identify the specific payment processes you want to model. 2. Define the goals and objectives for modeling these processes. 3. Gather relevant information and data about the payment processes. 4. Choose a process modeling technique or tool. 5. Start creating the process models, documenting the flow of activities and decision points. 6. Validate and refine the process models based on feedback. 7. Use the process models to identify areas for improvement and optimize the payment processes. Let me know if you need further assistance or have any specific questions!
How can I do it with BPMN 2.0? What information do I need to prepare for modeling?	To model your payment processes using BPMN 2.0, you will need to gather the following information: <ol style="list-style-type: none"> 1. Process flow: Understand the sequence of activities and decision points in the payment processes. 2. Participants: Identify the individuals or systems involved in the payment processes. 3. Data objects: Determine the data elements used and produced by the payment processes. 4. Events: Identify the triggers and outcomes of the payment processes. 5. Gateways: Determine the conditions and rules for routing the flow of activities. Once you have this information, you can start creating BPMN 2.0 models using a process modeling tool. Let me know if you need further assistance!

Thank you	Okay, let's wrap this up. From our conversation, I have learned that you are interested in modeling your finance processes and understanding how it can benefit your daily work. We discussed the advantages of process modeling over documentation and how end users can benefit from process models. To get started with modeling your payment processes using BPMN 2.0, you will need to gather information such as process flow, participants, data objects, events, and gateways. Follow the steps I provided to create your process models. If you have any more questions or need further assistance, feel free to ask. Goodbye and happy modeling!
Can you help me how many process steps should be modeled, which only consider system steps and not human interactions?	To determine the number of process steps that should be modeled, considering only system steps and not human interactions, you can start by identifying the key system actions or functions involved in the process. Then, map out the sequence of these system steps to create a high-level process flow. This will give you an initial understanding of the number of steps required for the system part of the process.
would you do anything difference in case of system process steps?	When modeling system process steps, it is important to focus on the key actions or functions performed by the system. By mapping out the sequence of these steps, you can create a high-level process flow that captures the system's behavior. This approach helps in understanding the system's role and its interactions with other components.
How are key actions by the system defined?	Key actions by the system are defined as the essential functions or activities performed by the system in the process. These actions contribute to achieving the desired outcome of the process. Identifying and documenting these key actions will help in understanding the system's behavior and its role in the overall process.
can you give me some examples?	Sure! Here are some examples of key actions performed by the system: data validation, data processing, decision making, error handling, and integration with external systems. These actions represent the core functions of the system and are essential for the successful execution of the process.
Can you be more specific for customer order entry process using SAP?	To be more specific for the customer order entry process using SAP, you can identify key actions such as customer data validation, order processing, inventory management, payment processing, and order confirmation. These actions represent the essential functions performed by the system in the process of customer order entry using SAP.
What do you mean exactly by order processing?	Order processing refers to the activities involved in handling and fulfilling customer orders. This includes tasks such as order validation, inventory allocation, picking and packing, shipping, and order tracking. It encompasses all the steps required to process and complete a customer's order from start to finish.

All right. Thanks and bye	Okay, let's wrap this up. You have learned that to determine the number of process steps that should be modeled, considering only system steps and not human interactions, you can start by identifying the key system actions or functions involved in the process. Then, map out the sequence of these system steps to create a high-level process flow. Your next steps could be to document the key actions for the customer order entry process using SAP and create a detailed process flow. If you have any more questions, feel free to ask. Goodbye!
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Table 10: Process Modelling Advisor & Planner – Input and Output Pairs

2.2 BPMN Wording Support

Process Modeller Input	AI Output
[Task label] Invoice creation	This label does not meet the verb-object style. 5 ways to do it correctly: - create invoice - generate invoice - issue invoice - prepare invoice - make invoice
[Event label] Order creation	This label does not meet the wording conventions. 5 ways to do it correctly: - order created - purchase created - order initiated - purchase initiated - order started
[Task label] Filling of form	This label does not meet the verb-object style. 5 ways to do it correctly: - fill form - complete form - input form data - provide form information - enter form details
[Event label] Conduct analysis	This label does not meet the wording conventions. 5 ways to do it correctly: - analysis conducted - analysis performed - analysis executed - analysis completed - analysis carried out
[Task label] Identify Contact Person	This label meets the verb-object style. 5 other ways to do it correctly: - Find Contact Person - Locate Contact Person - Discover Contact Person - Determine Contact Person - Identify Person to Contact
[Exclusive Gateway label] Free of charge?	This label is incorrect! Correct ways to phrase it are: - (Is it Free?, Yes, No) - (Cost?, Free, Paid) - (Price?, Free, Not Free)
[Task label] email	This label does not meet the verb-object style. 5 ways to do it correctly: - send email - forward email - email message - transmit email - dispatch email
[Exclusive Gateway label] Absence accepted? yes, no	This label is incorrect! Ways to phrase it correctly are: - (Absence Status?, Accepted, Not Accepted) - (Absence Approval?, Approved, Rejected) - (Absence Confirmation?, Confirmed, Not Confirmed)
[Exclusive Gateway label] (Absence Confirmation?, Confirmed, Not Confirmed)	This label is correct! Other ways to phrase it would be: - (Confirmation of Absence?, Confirmed, Not Confirmed) - (Absence Status?, Confirmed, Not Confirmed) - (Absence Confirmation Status?, Confirmed, Not Confirmed)

[Task label] Create Order	This label meets the verb-object style. 5 other ways to do it correctly: - Place Order - Make Order - Generate Order - Initiate Order - Start Order
[Exclusive Gateway label] (Free of charge?, yes, no, maybe)	This label is incorrect! Ways to phrase it correctly are: - (Free of charge?, Yes, No) - (Payment required?, No, Yes) - (Cost?, Free, Paid)
[Exclusive Gateway label] (Free of charge?, yes, no)	This label is correct! Other ways to phrase it would be: - (Is it Free?, Yes, No) - (Cost?, Free, Not Free) - (Payment Required?, No, Yes)
[Exclusive Gateway label] Is it black or white?	This label is incorrect! Correct ways to phrase it would be: - (Color?, Black, White) - (Shade?, Black, White) - (Color Choice?, Black, White)
[Exclusive Gateway label] (Color?, Black, White)	This label is correct! Other ways to phrase it would be: - (Preferred Color?, Black, White) - (Color Preference?, Black, White) - (Color Choice?, Black, White)
[Exclusive Gateway label] (Customer in Germany?, Yes, No)	This label is correct! Other ways to phrase it would be: - (Customer Location?, Germany, Other) - (Customer Country?, Germany, Not Germany) - (Customer Nationality?, German, Non-German)
[Task label] Creation of packaging	This label does not meet the verb-object style. 5 ways to do it correctly: - create packaging - design packaging - develop packaging - produce packaging - manufacture packaging
[Event label] No I dont need it anymore. please bring me back to main menu	This label does not meet the wording conventions. 5 ways to do it correctly: - request canceled - order canceled - purchase canceled - request withdrawn - order withdrawn

Table 11: BPMN Wording Support – Input and Output Pairs

2.3 Process Knowledge Extractor

Process Modeller Input	AI Output
How could I request a read confirmation?	<p>To request a read confirmation, follow these steps:</p> <ol style="list-style-type: none"> 1. Open the diagram for which you want to request a read confirmation. 2. Choose the "More actions" icon and select "Read Confirmation". 3. In the "List type field, choose whether you want to request read confirmations from individual users or user groups. 4. Use the "Add users" field to search for and select the users or user groups from which you want a confirmation. 5. Confirm your selection by clicking "Save". 6. A confirmation message will be displayed, indicating that read confirmations have been requested for the diagram. <p>Please note that read confirmations can only be requested for published diagrams.</p>

Who is responsible for the first step of repair order entry	The Repair Order Entry process is initiated by the customer contacting Frosty Delights with a service request for one or more of their machines. The channels responsible for entering service orders are Customer Service, Frosty Delights Stores, and Frosty Delights Online. Therefore, the responsibility for the first step of the repair order entry lies with the Customer Service, Frosty Delights Stores, and Frosty Delights Online channels.
What are all the steps for the repair order entry process from beginning to end?	<p>Here are the steps for the repair order entry process from beginning to end:</p> <ol style="list-style-type: none"> 1. Identification of the customer, persona, and machine 2. Understanding the customer's needs and service opportunities 3. Active listening to gather details about the potential defect of the machine 4. Assessment of the issue and determination of necessary repairs 5. Providing an estimate of repair time and cost 6. Customer agreement to proceed with the repairs 7. Repairing the machine, which may involve replacing parts or performing maintenance tasks 8. Testing the machine to ensure proper functioning 9. Delivery of the repaired machine back to the customer <p>Please note that these steps are based on the provided context and may not include all possible steps in the repair order entry process.</p>
Please list everyone who is involved in the scrapping process	<ul style="list-style-type: none"> - WH TM (warehouse team member) - InvCntr (Inventory Controller) - WH TL (warehouse team leader) - WH TM Scrap (team member responsible for scrapping)
Receiving. What standard tasks do I need to perform?	<p>Based on the provided context, the standard tasks that need to be performed during the receiving process are as follows:</p> <ul style="list-style-type: none"> - Record truck arrival - Open goods receiving door - Unload vehicle (truck, bridge, or sprinter) - Count and record the number of parcels during unloading - Confirm / sign carrier's shipping manifest - Move goods to a dedicated incoming receiving bench place - If the receiving bench place is full, place remaining incoming goods in a dedicated incoming parking area

what are the steps for will call process	<p>The steps for the will call process are as follows:</p> <ol style="list-style-type: none"> 1. Select Sold To partner as normal to open a dropdown list with valid values. 2. Select Partner ID or search by Partner Name. 3. Select Contact Name. 4. Click Close. 5. Click Next. 6. Enter Item to be ordered in the field. Confirm your entry by pressing the Enter key. 7. Select Frozen Delights Store Plant from the dropdown list. 8. Click Accept. 9. Click Next. 10. Fill out any Header or item notes as needed and click Next. 11. Click on the partner Input dropdown to open a dropdown list of delivery addresses. 12. Select Delivery Address of where the product will be used. 13. Click Edit. 14. Clear the Zip code, City, Street Address, and Tax Jurisdiction code information. If Street 2 information is populated, leave it as this is job information. 15. Enter Address info of Frozen Delights Store where the product is being picked up at. 16. Click Show suggestions. 17. Click Confirm. 18. Click Accept. 19. Click Next. 20. Click Next. 21. Click Order.
what is the repair entry process	<p>The repair entry process is the process for starting the service journey by entering a service order. The customer contacts Frosty Delights due to a service need for one or more machines. This process has an outgoing interface towards transport for inbound pick-up. There is no incoming interface as this is the starting point of the service journey.</p>
who is involved in repair order entry	<p>The users involved in the repair order entry process are parts of the Frosty Delights organization who enter service orders. This includes the Customer Service team and the Frosty Delights Stores.</p>

How to request overtime?	<p>To request overtime, you can follow these steps:</p> <ol style="list-style-type: none"> 1. Start by submitting an Overtime Request. 2. Wait for the Task received notification. 3. Once you receive the notification, you can Approve or Deny the Overtime Request. 4. If the request is approved, the Overtime Request will be submitted for further processing. 5. If the request is denied, the Overtime Request will be marked as rejected. <p>Please note that the specific process may vary depending on the organization's procedures and systems. It's always best to consult your company's guidelines or HR department for the exact process of requesting overtime.</p>
what needs to be approved in the scrapping process? make an example	<p>In the scrapping process, the following steps need to be approved:</p> <ol style="list-style-type: none"> 1. Scrapping initiation: The goods are physically checked for availability in the scrapping location according to system reports and approval. 2. Scrapping authorization: The scrapping request needs to be approved either through an authorization form or by email. 3. System scrapping: The scrapping process needs to be approved in the system with a relevant reason code. 4. Physical disposal: The physical disposal of the goods in a scrapping container needs to be approved. 5. Archive scrapping approval: The approval for scrapping needs to be saved and archived. <p>Example: Let's say there is a damaged ice cream machine that needs to be scrapped. The scrapping initiation is approved by the warehouse team member responsible for scrapping. Then, the scrapping authorization is approved through an authorization form. After that, the scrapping process is approved in the system with a reason code. Finally, the physical disposal of the machine is approved, and the scrapping approval is saved and archived.</p>
who is involved in the order entry process	<p>The users involved in the Repair Order Entry process are parts of the Frosty Delights organization who enter service orders. Specifically, service orders are entered by the Customer Service and Frosty Delights Stores channels. Additionally, customers can also do a self-service request by using the Frosty Delights Online channel.</p>

<p>How are the levels of diagrams calculated?</p>	<p>The levels of diagrams are calculated based on the hierarchy and structure of the process. The process level displayed for a diagram can be different than the expected level due to various factors. Some key points to consider are:</p> <ul style="list-style-type: none">- The shortest path for a process to a top-level diagram is considered. Processes linked from more than one diagram can be on different process levels across the process landscape, and the shown level is always their minimum process level.- Cycles are excluded when calculating the shortest path. For example, if two diagrams are referencing each other as subprocesses, they are not included in the calculation.- Any diagram that is not referenced in another diagram as a sub-process is considered a top-level diagram.- If several paths of the same length are available for the shortest path, the system selects one automatically based on internal IDs.- Only published diagrams are included in the calculation, and the process level can be different for published and unpublished versions.- Custom attributes linking to diagrams do not influence the process level calculation. <p>Overall, the process level calculation takes into account the relationships and connections between diagrams to determine their hierarchical position in the process landscape.</p>
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What are the steps of order entry for a repair order?	<p>The steps of order entry for a repair order are as follows:</p> <ol style="list-style-type: none"> 1. Identification of the customer, including service agreement, customer class and classification, focus customer, and credit situation. 2. Identification of the persona, including the role of the person. 3. Identification of the machine, including machine type and generation, serial number, warranty coverage, repair history, age of the machine, and cumulated amount spent on repair. 4. Active listening to understand the customer needs and service opportunities. 5. Get details about the potential defect of the machine. 6. Provide guidance to identify if the machine is really defective or can be reset. 7. Customize the service offer to enthusiastically present the service value proposition. 8. Follow the appropriate process based on the verification script, warranty coverage, and repair cost limit. 9. Offer additional services if applicable. 10. Close the deal with details and always think about the follow-up. 11. Record the service order (notification) and price agreement. 12. Record any additional information such as purchase order number, bill-to address, and payment type. 13. Determine the repair center for service execution. <p>Please note that these steps are specific to the order entry process for a repair order and may vary depending on the specific requirements and processes of the organization.</p>
what are the standard tasks of receiving?	<p>The standard tasks of receiving include:</p> <ul style="list-style-type: none"> - Record truck arrival - Open goods receiving door - Unload vehicle (truck, bridge or sprinter) - Count and record number of parcels during unloading (if applicable) - Confirm/sign carrier's shipping manifest - Move goods to dedicated incoming receiving bench place - Place remaining incoming goods in dedicated incoming parking area if receiving bench place is full - Perform receiving tasks following process guidelines - Scan notification/carrier label - Execute receiving tasks following process guidelines - Scan NFC tag to provide info to technician (if applicable) - Put waste away - Place machine properly inside case or carton box - Place new labels on dedicated side - Close case or carton box - Push machine to buffer area <p>Please note that these tasks may vary depending on the specific process and requirements of the organization.</p>

Table 12: Process Knowledge Extractor – Input and Output Pairs

2.4 Next Element Recommender

Process Modeller Input	AI Output
Create repair order, forward order to technician, execute pickup, receive tool	Thank you! What is the desired outcome or goal of the process (end event(s))?
Tool is repaired	Task: Perform repair
application received, review application, contact applicant	Thank you! What is the desired outcome or goal of the process (end event(s))?
new employee hired (or application rejected)	Exclusive gateway: Applicant suitable for the position? yes: Proceed with the hiring process. no: Reject the application and end the process.
Job Change agreed, Align Job Change Details, Initiate Contract Request, Create Contract	Thank you! What is the desired outcome or goal of the process (end event(s))?
Change Job - Internal / National / International Transfer	Task: Review and sign contract
identify customer, select machine, select another machine, select 3 more machines	Thank you! What is the desired outcome or goal of the process (end event(s))?
creating a repair order with multiple machines	Task: Add machines to repair order
application received, review application	Thank you! What is the desired outcome or goal of the process (end event(s))?
application accepted, application rejected	Exclusive gateway: Application accepted? yes: Proceed to the next step in the process. no: Send rejection notification.
customer request received, check request in Outlook, enter order in SAP, derive delivery date	Thank you! What is the desired outcome or goal of the process (end event(s))?
confirmation sent to customer	Task: Send confirmation to customer
customer request received, check request in Outlook, enter order in SAP, derive delivery date	Thank you! What is the desired outcome or goal of the process (end event(s))?
does customer confirm	Exclusive gateway: Customer confirmed? yes: Proceed with order fulfillment. no: Handle the rejection, perhaps with a cancellation or follow-up action.
customer complaint received, check if customer is in the system, document complaint	Thank you! What is the desired outcome or goal of the process (end event(s))?
complaint handled and feedback to customer	Task: Investigate complaint and gather relevant information.
Open the system, Start an order, Fill out the fields	Thank you! What is the desired outcome or goal of the process (end event(s))?
Order submitted	Task: Review order details and confirm
customer calls, pick up the phone, identify the customer,	Thank you! What is the desired outcome or goal of the process (end event(s))?
two possible outcomes: new customer added Or customer request rejected	Exclusive gateway: Is the customer a new customer? yes: Add the customer to the system. no: Reject the customer request.
customer calls, pick up the phone, identify the customer,	Thank you! What is the desired outcome or goal of the process (end event(s))?
Customer request solved in first call	Task: Resolve customer request

create order, receive machine, repair machine	Thank you! What is the desired outcome or goal of the process (end event(s))?
end of repair	Task: Perform quality check

Table 13: Next Element Recommender – Input and Output Pairs

2.5 BPMN Template Generator

Process Modeller Input	AI Output
The customer has a defect tool which needs to get repaired.	Thank you! What is the desired outcome or goal of the process (end event(s))?
The repaired tool is back at the customer.	Customer: Report defect tool Service Desk: Create ticket Service Technician: Receive ticket Service Technician: Inspect tool Service Technician: Repair tool Service Technician: Test tool Service Technician: Approve repair Service Desk: Notify customer Customer: Receive repaired tool
it ticket management process	Thank you! What is the desired outcome or goal of the process (end event(s))?
incident resolved	Support Agent: Receive ticket Analyze ticket Assign ticket to appropriate team Team: Investigate issue Team: Resolve issue Support Agent: Verify resolution Support Agent: Close ticket
hiring process	Thank you! What is the desired outcome or goal of the process (end event(s))?
either hire or reject a candidate	HR: Receive job application Review application Schedule interview Conduct interview Evaluate candidate Decide to hire HR: Send offer letter — HR: Receive job application Review application Schedule interview Conduct interview Evaluate candidate Decide to reject
an employee decides to change her job and continue working in a different part of the organization. These requires some alignments and a contract change	Thank you! What is the desired outcome or goal of the process (end event(s))?

employee is ready to start new job	Employee: Decide to change job Employee: Inform manager Manager: Discuss job change Manager: Approve job change Employee: Discuss contract change HR: Prepare contract change Employee: Sign new contract Employee: Start new job
Customer comes with 3 machines into store. Representative needs to create a repair order. Please describe in detail how to book the repair order.	Thank you! What is the desired outcome or goal of the process (end event(s))?
repair order created	Customer: Bring 3 machines to store Representative: Greet customer Representative: Inspect machines Representative: Create repair order Representative: Add machine details to repair order Representative: Assign repair technician Representative: Schedule repair Representative: Inform customer about repair schedule Representative: Provide repair order details to customer
recruiting a new employee and onboard him	Thank you! What is the desired outcome or goal of the process (end event(s))?
employee hired	HR: Post job opening Receive applications Review applications Conduct interviews Select candidate — HR: Post job opening Receive applications Review applications Conduct interviews Reject candidate
customer complaint handling process	Thank you! What is the desired outcome or goal of the process (end event(s))?
complaint resolved	Customer: Submit complaint Support Team: Receive complaint Investigate complaint Resolve complaint Customer: Confirm resolution — Customer: Submit complaint Support Team: Receive complaint Investigate complaint Escalate complaint Manager: Review complaint Resolve complaint Customer: Confirm resolution
Hiring process	Thank you! What is the desired outcome or goal of the process (end event(s))?

Candidate hired	HR: Post job opening Receive applications Review applications Shortlist candidates Conduct interviews Check references Make job offer Candidate: Accept job offer
Payment process	Thank you! What is the desired outcome or goal of the process (end event(s))?
Order paid	Customer: Place order Shop: Check payment Warehouse: Package goods Ship goods Customer: Confirm receipt Shop: Process payment Shop: Update order status Shop: Send payment confirmation
Customer order	Thank you! What is the desired outcome or goal of the process (end event(s))?
Package delivered to customer	Customer: Place order Shop: Check payment Warehouse: Package goods Ship goods Customer: Receive package
repair process	Thank you! What is the desired outcome or goal of the process (end event(s))?
invoiced	Repairer: Receive repair request Assess repair needs Estimate repair cost Inform customer Customer: Approve repair Repairer: Schedule repair Order necessary parts Perform repair Test repair Invoice customer — Repairer: Receive repair request Assess repair needs Estimate repair cost Inform customer Customer: Reject repair Repairer: Close repair request
sales order creation including intercompany	Thank you! What is the desired outcome or goal of the process (end event(s))?

invoice generation for customer and intercompany supplier	Salesperson: Create sales order Salesperson: Check intercompany supplier availability Salesperson: Create intercompany purchase order Salesperson: Send sales order to customer Salesperson: Send intercompany purchase order to supplier Customer: Receive sales order Customer: Receive invoice Supplier: Receive intercompany purchase order Supplier: Generate invoice
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Table 14: BPMN Template Generator – Input and Output Pairs

2.6 Process Modelling Guide

Process Modeller Input	AI Output
I want to model the receive external visitors process, because many employees do not know how to do this	Thank you for sharing your motivation for modelling the process. It is crucial to have a clear understanding of the motivation and the intended usage of the process model. Based on what you mentioned, we will focus on documenting the steps involved in receiving external visitors. Let's proceed to gather more information about the process. What should be the outcome (end event or output) of the process you want to model? What signifies the completion or conclusion of the process?
external visitor welcomed	An from where do you start? What triggers the initiation of this process (start event)?
external visit scheduled	What are the main steps or activities involved in executing this process? Let's list them out in sequential order.
register external visitor, request lunch voucher, send confirmation email, receive visitor at reception, hand over badge	Are there any decision points within the process where different paths could be taken? If so, what triggers these decisions?
yes, sometimes, when we register the visitor, they are not yet in the database. In that case, we have to enter data. otherwise, we directly proceed with requesting a lunch voucher	Who are the primary stakeholders or roles involved in executing this process? Let's identify who is responsible for each step.

any employee within the company	<p>Employee: Schedule external visit Register external visitor Visitor in database? No Employee: Data entry required Employee: Request lunch voucher Employee: Send confirmation email Employee: Receive visitor at reception Employee: Hand over visitor badge —</p> <p>Employee: Schedule external visit Register external visitor Visitor in database? Yes Employee: Request lunch voucher Employee: Send confirmation email Employee: Receive visitor at reception Employee: Hand over visitor badge</p>
[...]	<p>Alright! So that's what I figured out so far: The process starts with receiving an order request from a customer. The order entry channel gathers necessary data and fills in the order form. Then, the customer is asked if they want to receive a quotation. If they do, an extra step is taken to create the quotation and send it to the customer for review and confirmation. After receiving confirmation, the order is submitted. If the customer does not want a quotation, the order is directly submitted. Finally, the process ends with submitting the order. There are no dependencies in the process. Does this fit to the process you have in mind?</p>
yes!	<p>Order entry channel: Receive order request from customer Gather necessary data Fill order form Customer: Want quotation? Yes Order entry channel: Create quotation Send quotation to customer Customer: Review and confirm quotation Order entry channel: Receive confirmation Submit order —</p> <p>Order entry channel: Receive order request from customer Gather necessary data Fill order form Customer: Want quotation? No Order entry channel: Submit order</p>

to train new employees	<p>Thank you for sharing your motivation to train new employees. It is crucial to have a clear understanding of the process model's usage to ensure its effectiveness. Let's now proceed to gather more information about the process.</p> <p>What should be the outcome (end event or output) of the process you want to model? What signifies the completion or conclusion of the process?</p>
happy customer after a complaint	And from where do you start? What triggers the initiation of this process (start event)?
received complaint	What are the main steps or activities involved in executing this process? Let's list them out in sequential order.
check if customer is in the system, document complaint, investigate complaint, analyze complaint, give feedback to customer, close complaint in system	Are there any decision points within the process where different paths could be taken? If so, what triggers these decisions?
yes after investigation. Customer status	Who are the primary stakeholders or roles involved in executing this process? Let's identify who is responsible for each step.
customer service and manager	Are there any dependencies between different steps or activities within the process? For example, does one step need to be completed before another can begin?
yes every one	<p>Alright! So that's what I figured out so far:</p> <p>The process starts with the 'received complaint' event. Then, the process follows a sequence of activities which include checking if the customer is in the system, documenting the complaint, investigating the complaint, analyzing the complaint, giving feedback to the customer, and closing the complaint in the system. There is a decision point after the investigation, based on the customer status. The activities in the process are executed by the customer service and manager roles. There are dependencies in the process, where each activity depends on the previous one.</p> <p>Does this fit to the process you have in mind?</p>

yes	<p>Received complaint</p> <p>Customer service: Check if customer is in the system</p> <p>Document complaint</p> <p>Investigate complaint</p> <p>Customer service: Analyze complaint</p> <p>Customer service: Give feedback to customer</p> <p>Customer service: Close complaint in the system</p> <p>---</p> <p>Received complaint</p> <p>Customer service: Check if customer is in the system</p> <p>Document complaint</p> <p>Investigate complaint</p> <p>Manager: Customer status?</p> <p>Existing</p> <p>Customer service: Analyze complaint</p> <p>Customer service: Give feedback to customer</p> <p>Customer service: Close complaint in the system</p> <p>---</p> <p>Received complaint</p> <p>Customer service: Check if customer is in the system</p> <p>Document complaint</p> <p>Investigate complaint</p> <p>Manager: Customer status?</p> <p>New</p> <p>Customer service: Analyze complaint</p> <p>Customer service: Give feedback to customer</p> <p>Customer service: Close complaint in the system</p> <p>Before we conclude this session, I'd like to gather any feedback or reflections on today's session. Is there anything you found particularly helpful or any areas for improvement?</p>
1st lane is not necessary and there are no tasks after the gate	<p>Thank you for your feedback. We appreciate your input and will take it into consideration. We will make sure to remove the 1st lane and add tasks after the gate in the next iteration. Goodbye and have a great day!</p>
I need to model this process because it should be checked upon potential for process automation	<p>Thank you for sharing your motivation. It is crucial to have a clear understanding of why we are modelling the process and how it will be used. In this case, we will focus on assessing the potential for process automation. Now, let's gather more information about the process.</p> <p>What should be the outcome (end event or output) of the process you want to model? What signifies the completion or conclusion of the process?</p>
contract for new hire signed and archived	<p>And from where do you start? What triggers the initiation of this process (start event)?</p>
after successful interview a contract proposal is sent out to potential new hire	<p>What are the main steps or activities involved in executing this process? Let's list them out in sequential order.</p>

a first draft of a contract is sent out by HR to the new hire, new hire checks contract, if everything is correct he approves contract, HR receives approved contract and sends out signed version for signature, candidate signs contract and returns it to HR	Are there any decision points within the process where different paths could be taken? If so, what triggers these decisions?
if contract draft is not correct, new hire marks the spots and corrects them before sending it back to Hr	Who are the primary stakeholders or roles involved in executing this process? Let's identify who is responsible for each step.
see above	Are there any dependencies between different steps or activities within the process? For example, does one step need to be completed before another can begin?
not applicable	<p>Alright! So that's what I figured out so far:</p> <p>The process starts with a successful interview, after which a contract proposal is sent out to the potential new hire. HR sends a first draft of the contract to the new hire, who checks it for correctness. If everything is correct, the new hire approves the contract. HR then receives the approved contract and sends out a signed version for signature. The candidate signs the contract and returns it to HR. If the contract draft is not correct, the new hire marks the spots and corrects them before sending it back to HR. The process ends when the contract for the new hire is signed and archived.</p> <p>Does this fit to the process you have in mind?</p>
yes	<p>Interview: Successful HR: Send contract proposal New hire: Check contract Correct New hire: Approve contract HR: Receive approved contract HR: Send signed contract New hire: Sign contract New hire: Return contract to HR —</p> <p>Interview: Successful HR: Send contract proposal New hire: Check contract Not correct New hire: Mark and correct contract New hire: Send corrected contract to HR HR: Receive corrected contract HR: Send signed contract New hire: Sign contract New hire: Return contract to HR</p> <p>Before we conclude this session, I'd like to gather any feedback or reflections on today's session. Is there anything you found particularly helpful or any areas for improvement?</p>

Maybe you could provide me further questions to help me getting more specific at certain tasks	Thank you for your feedback! I appreciate your suggestion to provide further questions to help you get more specific at certain tasks. I will take note of this and work on improving the process modelling session. Goodbye and have a great day!
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Table 15: Process Modelling Guide – Input and Output Pairs

2.7 Process Model Creator

Process Modeller Input	AI Output
A customer enters the Hilti Store. If the sales representative is free, the sales representative approaches the customer. If not, the customer browses the store by themselves. The customer then selects the goods and purchases them.	Customer: Enter Hilti Store Sales representative available? Yes Sales representative: Approach customer — Customer: Enter Hilti Store Sales representative available? No Customer: Browse store Customer: Select goods Customer: Purchase goods
We need to add steps for when the sales representative approaches the customer. She then asks about the customer wishes. If the customer has a specific good in mind, the customer selects the goods and purchases them. Otherwise, the sales representative consults the customer	Customer: Enter Hilti Store Sales representative available? Yes Sales representative: Approach customer Ask about customer wishes Specific good in mind? Yes Customer: Select goods Purchase goods — Customer: Enter Hilti Store Sales representative available? No Customer: Browse store Customer: Select goods Purchase goods — Customer: Enter Hilti Store Sales representative available? Yes Sales representative: Approach customer Ask about customer wishes Specific good in mind? No Sales representative: Consult customer

<p>the process starts when the Event Manager receives a request for an event. She then evaluates the request. If there is info missing, she asks for more info. If the event is not in her responsibility, she politely declines. If the event is in her scope, she confirms her support. She then creates a plan and sends the plan to her counterpart for confirmation.</p>	<p>Event Manager: Receive request for event Evaluate request Is info missing? Yes Event Manager: Ask for more info — Event Manager: Receive request for event Evaluate request Is info missing? No Is event in responsibility? No Event Manager: Politely decline — Event Manager: Receive request for event Evaluate request Is info missing? No Is event in responsibility? Yes Event Manager: Confirm support Create plan Send plan to counterpart for confirmation</p>
<p>I open my IT-system ZAMSTR transaction, enter notification number, check if serial number of machine is correct, if serial number is not correct I need to search for the right one, confirm correct serial number, register repair details and confirm book the repair now. system will print a order confirmation, which I handover to customer, customer signs the document, end</p>	<p>I: Open IT-system ZAMSTR transaction Enter notification number Check serial number Serial number correct? Yes Confirm serial number Register repair details Confirm book the repair now System: Print order confirmation I: Handover to customer Customer: Sign the document (finish) — I: Open IT-system ZAMSTR transaction Enter notification number Check serial number Serial number correct? No I: Search for the right one Confirm correct serial number Register repair details Confirm book the repair now System: Print order confirmation I: Handover to customer Customer: Sign the document (finish)</p>

<p>A customer calls at our customer service to order product. Customer gets verified from customer service agent. customer tells what he would like to order and customer service agent directly enters product into the SAP system with material and quantity. When saving the system runs different checks in the background and provides a proposed delivery date at the end. Customer service confirms with customer that this earliest possible delivery date is ok and confirms order. Customer receives order confirmation directly after the call.</p>	<p>Customer: Call customer service Customer service agent: Verify customer Customer: Order product Customer service agent: Enter product into SAP system with material and quantity System: Run checks System: Provide proposed delivery date Customer service agent: Confirm delivery date with customer Customer service agent: Confirm order Customer: Receive order confirmation</p>
<p>I come to the shop and I want to buy an ice cream. If the line is too long, then I will go to another shop. If I don't have to wait in the line, then I will buy an ice cream here. I will take vanilla flavour of ice cream. I will pay my order. I will leave the shop.</p>	<p>Person: Come to shop Person: Want to buy ice cream Is line too long? Yes Person: Go to another shop — Person: Come to shop Person: Want to buy ice cream Is line too long? No Person: Buy ice cream here Person: Take vanilla flavour of ice cream Person: Pay order Person: Leave shop</p>
<p>I come to the shop and I want to buy an ice cream. If the line is too long, then I will go to another shop. If I don't have to wait in the line, then I will buy an ice cream here. I will take vanilla flavour of ice cream. While my ice cream is getting ready, I will pay my order. I will take my ice cream. I will leave the shop.</p>	<p>Shop: Come to the shop Customer: Want to buy ice cream How is the line? Too long Customer: Go to another shop — Shop: Come to the shop Customer: Want to buy ice cream How is the line? Not have to wait Customer: Buy ice cream here Customer: Take vanilla flavour of ice cream Customer: While ice cream is getting ready Customer: Pay order Customer: Take ice cream Customer: Leave the shop</p>
<p>A customer places an order. the order department verifies order accuracy and completeness. They then perform an inventory check. The warehouse prepares and dispatches the order. Finance generates and sends an invoice. The customer pays</p>	<p>Customer: Place order Order department: Verify order accuracy and completeness Order department: Perform inventory check Warehouse: Prepare and dispatch order Finance: Generate and send invoice Customer: Pay</p>

before the customer can pay, he needs to receive the invoice	Customer: Place order Order department: Verify order accuracy and completeness Order department: Perform inventory check Warehouse: Prepare and dispatch order Finance: Generate and send invoice Customer: Receive invoice
what happened to the pay step? also, after payment, the order department sends a small gift	Customer: Place order Order department: Verify order accuracy and completeness Order department: Perform inventory check Warehouse: Prepare and dispatch order Finance: Generate and send invoice Customer: Receive invoice Customer: Proceed with payment Order department: Send small gift
after the inventory check, one outcome is that the inventory is there. Then the process continues as you have it. If it's not there, the order management department has to inform the customer and the process ends	Customer: Place order Order department: Verify order accuracy and completeness Order department: Perform inventory check Inventory available? Yes Warehouse: Prepare and dispatch order Finance: Generate and send invoice Customer: Receive invoice Customer: Proceed with payment Order department: Send small gift — Customer: Place order Order department: Verify order accuracy and completeness Order department: Perform inventory check Inventory available? No Order department: Inform customer
Material Managers review on a daily basic the items in backorder. In case of a solution, they send a mail to the customer service team to change the item. In case of no solution, the Material Manager needs to review it the next day again.	Material Managers: Review items in backorder Solution? Yes Material Managers: Send mail to customer service team to change item — Material Managers: Review items in backorder Solution? No Material Managers: Review items in backorder again the next day

Table 16: Process Model Creator – Input and Output Pairs

2.8 Modelling Conventions Navigator

Process Modeller Input	AI Output
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Which steps I need to go through as a process modeler?	<p>Here are the steps you need to go through as a process modeler:</p> <ol style="list-style-type: none"> 1. Start with high-level views: Begin by creating a high-level process overview using pools to represent major participants or departments in the process. 2. Name processes according to the Process Naming Convention: Follow the naming convention guidelines to ensure consistency and clarity in process names. 3. Use swimlanes for roles and responsibilities: Utilize swimlanes within pools to represent different roles or responsibilities within the process. 4. Define attributes on process level: Make sure to define mandatory attributes such as GPO (Global Process Owner), GPM (Global Process Manager), description, process cluster, and process indicators. 5. Use sequence flow and message flow: Define the order of activities within a process using sequence flow and show communication between pools or processes using message flow. 6. Use gateways for decision points: Apply exclusive, inclusive, and parallel gateways to represent decision points and branching in the process flow. 7. Understand subprocesses: Utilize subprocesses to break down complex processes into smaller, more manageable parts. 8. Review and update regularly: Periodically review and update your process models to reflect changes in the actual processes. <p>Source: - Context: (rich-text) 0a808b33-3636-4f8a-ac39-f2aabcd7dd87.html - Context: (rich-text) 0a808b33-3636-4f8a-ac39-f2aabcd7dd87.html - Context: (rich-text) 0a808b33-3636-4f8a-ac39-f2aabcd7dd87.html - Context: (rich-text) 0a808b33-3636-4f8a-ac39-f2aabcd7dd87.html - Context: (rich-text) 1d245418-df1b-4de1-8fc7-e7cc3f197dc9.html - Context: (rich-text) 1d245418-df1b-4de1-8fc7-e7cc3f197dc9.html - Context: (rich-text) 0a808b33-3636-4f8a-ac39-f2aabcd7dd87.html</p>
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How and when should I use subprocesses?	<p>Subprocesses should be used when you need to break down a complex process into smaller, more manageable parts. They help to improve the readability and understandability of the overall process diagram. Here's how and when you should use subprocesses:</p> <ul style="list-style-type: none"> - Use subprocesses to represent separate, more detailed processes within the main process diagram. - Subprocesses can be used to decompose complex process steps into smaller, more manageable tasks. - They can also be used to reuse common process steps across multiple process diagrams. - Subprocesses should be used when there is a need to show a more detailed view of a specific part of the process. - It is important to maintain a balance between simplicity and detail when using subprocesses. Avoid excessive nesting of subprocesses to keep the diagram easy to understand.
What is Hilti's BPE approach?	<p>The BPE approach is a context-aware business process management strategy used by Hilti. It involves the use of the BPE platform, which provides a centralized and collaborative environment for managing all business processes. The platform allows users to access and navigate the organization's business processes easily. The BPE approach emphasizes the importance of process clusters, which recognize that not all processes can be managed using a one-size-fits-all approach. Process clusters are created based on two critical dimensions: variability and frequency. Variability measures the degree to which a process can or should respond to internal and external dynamics, while frequency reflects how often the process is carried out. Each process cluster has its own governance structures, process documentation requirements, and process analytics best practices. The BPE approach also emphasizes the use of process diagrams, which are modeled using BPMN (Business Process Model and Notation). BPMN is a standardized notation that helps in understanding and visualizing the flow of processes. The BPE platform provides features for collaboration, version control, and validation of process models. It also supports the use of swimlanes to represent roles and responsibilities within processes. Overall, the BPE approach aims to improve the efficiency, effectiveness, and responsiveness of business processes at Hilti.</p>

when shall I use a conditional gateway? example please	<p>A conditional gateway is used in a process when different paths need to be modeled based on certain conditions. It splits the process flow into multiple paths and determines which path to take based on the evaluation of a condition. Here's an example:</p> <p>In a loan approval process, a conditional gateway can be used to determine whether an applicant meets the credit score requirement. If the applicant's credit score is above a certain threshold, the process flow can continue to the next step for further evaluation. If the credit score is below the threshold, the process flow can take a different path, such as sending a rejection notification to the applicant.</p>
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<p>What should I know about Hilti modeling</p>	<p>When it comes to modeling at Hilti, there are several guidelines and best practices to keep in mind. Here are some key points to know about Hilti modeling:</p> <ul style="list-style-type: none"> - Process Naming Convention: Hilti follows a specific naming convention for processes. Process names should start with a verb followed by a noun, such as "Create Order". - Clear and Logical Modeling: Process models should be clear and logical, ensuring that the audience can easily understand the process. - Keep It Simple: Strive for simplicity in process models, avoiding unnecessary complexity. - Complete and Compliant Models: Process models should be complete and contain all necessary information, such as process steps, additional attributes, responsibilities, and IT systems. - Decision Points: If needed, decision points should be represented using exclusive, inclusive, or parallel gateways. Gateways should be named clearly and logically with well-described decision criteria. - Start and End Events: Process models should have clear start and end events that reflect the purpose and completion of the process. - Swimlanes for Roles and Responsibilities: Utilize swimlanes within pools to represent different roles or responsibilities within the process. This helps visualize the flow of activities and decisions across different organizational units. - Validation and Collaboration: Use Signavio's validation features to ensure compliance with BPMN 2.0 standards and involve relevant stakeholders for collaboration and input. - Regular Review and Update: Periodically review and update process models to reflect changes in the actual processes, ensuring accuracy and value. - Process Documentation: Link supporting documents, guidelines, templates, and forms to the process models to provide context and easy access to process-related information. - Process Clusters: Hilti uses a process cluster approach to categorize processes based on their variability and frequency. Each process cluster has specific BPM requirements and governance structures. - Dictionary: Hilti has a dictionary in the BPE platform that serves as a centralized repository for reusable process objects. It helps ensure consistent terminology and elements in process modeling. <p>These guidelines and practices are aimed at creating clear, standardized, and effective process models at Hilti.</p>
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what is bpe	BPE stands for Business Process Excellence. It refers to the practice of managing and optimizing business processes to achieve operational efficiency, improve customer satisfaction, and drive business success. BPE involves the use of methodologies, tools, and techniques to analyze, design, model, implement, and continuously improve business processes. The goal of BPE is to ensure that processes are efficient, effective, and aligned with organizational goals and objectives. The BPE platform mentioned in the context is a centralized and collaborative environment for managing and documenting business processes.
what modelling guidelines exist at hilti	<p>The modeling guidelines at Hilti include the following:</p> <ul style="list-style-type: none"> - Keep It Simple: Strive for simplicity in process models, avoiding unnecessary complexity. - Start with High-Level Views: Begin with a high-level process overview using pools to represent major participants or departments. - Name Processes According to Process Naming Convention: Follow a naming convention for processes, using verbs followed by nouns. - Use Swimlanes for Roles and Responsibilities: Utilize swimlanes to represent different roles or responsibilities within the process. - Sequence Flow and Message Flow: Use sequence flow to define the order of activities and message flow to show communication between pools or processes. - Gateways for Decision Points: Apply exclusive, inclusive, and parallel gateways to represent decision points and branching in the process flow. - Event Types for Triggers: Choose appropriate event types (start, intermediate, end) to represent triggers. - Subprocesses for Modularity: Utilize subprocesses to break down complex processes. - Consistent Naming Rules for Modeling Elements: Use consistent and meaningful names for tasks, events, gateways, and other elements. - Validation: Use Signavio's validation features to ensure compliance with BPMN 2.0 standards and best practices. - Collaboration and Version Control: Collaborate with stakeholders and utilize version control to maintain a history of process models. - Regular Review and Update: Periodically review and update process models to reflect changes in the actual processes. <p>These guidelines ensure that process models are clear, understandable, and aligned with organizational goals and objectives.</p>
How many levels of detail we have for our processes in Signavio?	There are five levels of detail for processes in Signavio.

Which five levels of detail we have?	<p>The five levels of detail for processes in Signavio are:</p> <ol style="list-style-type: none"> 1. Process landscape: This is the overall view of the organization's processes, providing a high-level map of the processes. 2. Process group-specific landscape: This focuses on a specific process group and shows the processes that are relevant to that group. 3. Process diagrams: These provide a detailed view of each process and how it is executed. They use BPMN 2.0 notation to model the processes. 4. Sub-processes: These are more detailed processes that are modeled as BPMN 2.0 diagrams. 5. Process documentation: This includes all supporting documents such as click-level instructions, guidelines, templates, and forms that are linked to the processes and process steps.
what are the mandatory attributes?	<p>On the process level, the mandatory attributes for a process in BPE at Hilti are:</p> <ul style="list-style-type: none"> - GPO (Global Process Owner) - GPM (Global Process Manager) - Description: further describe the process, provide more clarity - Process cluster: Performance, Innovation, Agility, Reliability - Process indicators <p>Optional attributes on the process level include:</p> <ul style="list-style-type: none"> - Documents - KPI's: For every process, the corresponding KPI's should be considered and shortly described in the KPI attribute. <p>Please note that this information is specific to BPE at Hilti and may not apply universally.</p>

Table 17: Modelling Conventions Navigator – Input and Output Pairs

2.9 Human Support Request Receiver

Process Modeller Input	AI Output
My model looks very cumbersome, I need help for an expert modeler.	I completely understand why you need help from an expert modeler. Sometimes, complex models can be overwhelming and it's always beneficial to seek assistance from someone with expertise in the field. I'll make sure to connect you with a human modeler who can provide the support you need.

I would like to use Signavio flows for a workshop and would like to learn if the team already has best practices or experiences in doing so	I understand that you need help from a human for this request because you are specifically looking for information about best practices and experiences with using Signavio flows in a workshop. While I can provide general information and guidance, human support can offer more specific insights and firsthand experiences that may be valuable to you.
I'm not sure how this modelling initiative aligns with the overall company strategy and would like to speak to the responsible department head.	I completely understand your need to speak to the responsible department head. Sometimes, certain questions or concerns require a human touch and expertise to address, especially when it comes to aligning process modelling initiatives with the overall company strategy. I will connect you with the responsible department head right away.
I want to receive training on how to use Signavio as I have a big project coming up	I completely understand why you need human support for this request. Learning how to use Signavio for a big project can be complex and it's always helpful to have a human guide who can provide personalized training and support. While AI can assist with many tasks, there are certain situations where human expertise and guidance are invaluable. I'm here to help you connect with a human trainer who can provide the training you need. Please let me know if there's anything else I can assist you with.
it's just I'm really unsure about what level of detail to choose when modelling	I completely understand why you would need human support for this. Choosing the right level of detail when modelling can be a complex task that requires human judgment and expertise. AI may not have the contextual understanding and experience to provide accurate guidance in such cases. Don't worry, I'm here to assist you and connect you with a human expert who can help you navigate through this uncertainty. How can I assist you further?
I need to be precise in how I ask you, otherwise I don't get my expected answer	I understand that you need help from a human because you mentioned that you need to be precise in how you ask me. Sometimes, AI may not be able to understand the nuances and context of specific questions, and a human can provide the necessary assistance to ensure you get the expected answer.
I would like to have further information on journey modelling	I understand that you need further information on journey modeling. While I can assist with a variety of things, I believe that a human would be better suited to provide you with the detailed information and guidance you are seeking. Humans have the ability to provide personalized insights and experiences that AI may not be able to replicate. Please let me know how I can assist you further.
emotions	I understand that you need help from a human because emotions can be complex and require human understanding and empathy.
coffee break	I understand that you need help from a human for this specific request because it seems to be related to a personal preference or situation that requires human judgment and understanding.

Which process responsibilities we have in the organization?	I understand that you need help from a human because the question you asked requires a deeper understanding of the organization's processes and responsibilities. While I can provide general information and guidance, a human would be better equipped to provide specific and accurate details about the process responsibilities in your organization.
provision of access to Signavio	I understand that you need help from a human because the provision of access to Signavio requires human intervention and cannot be handled by an AI.

Table 18: Human Support Request Receiver – Input and Output Pairs