

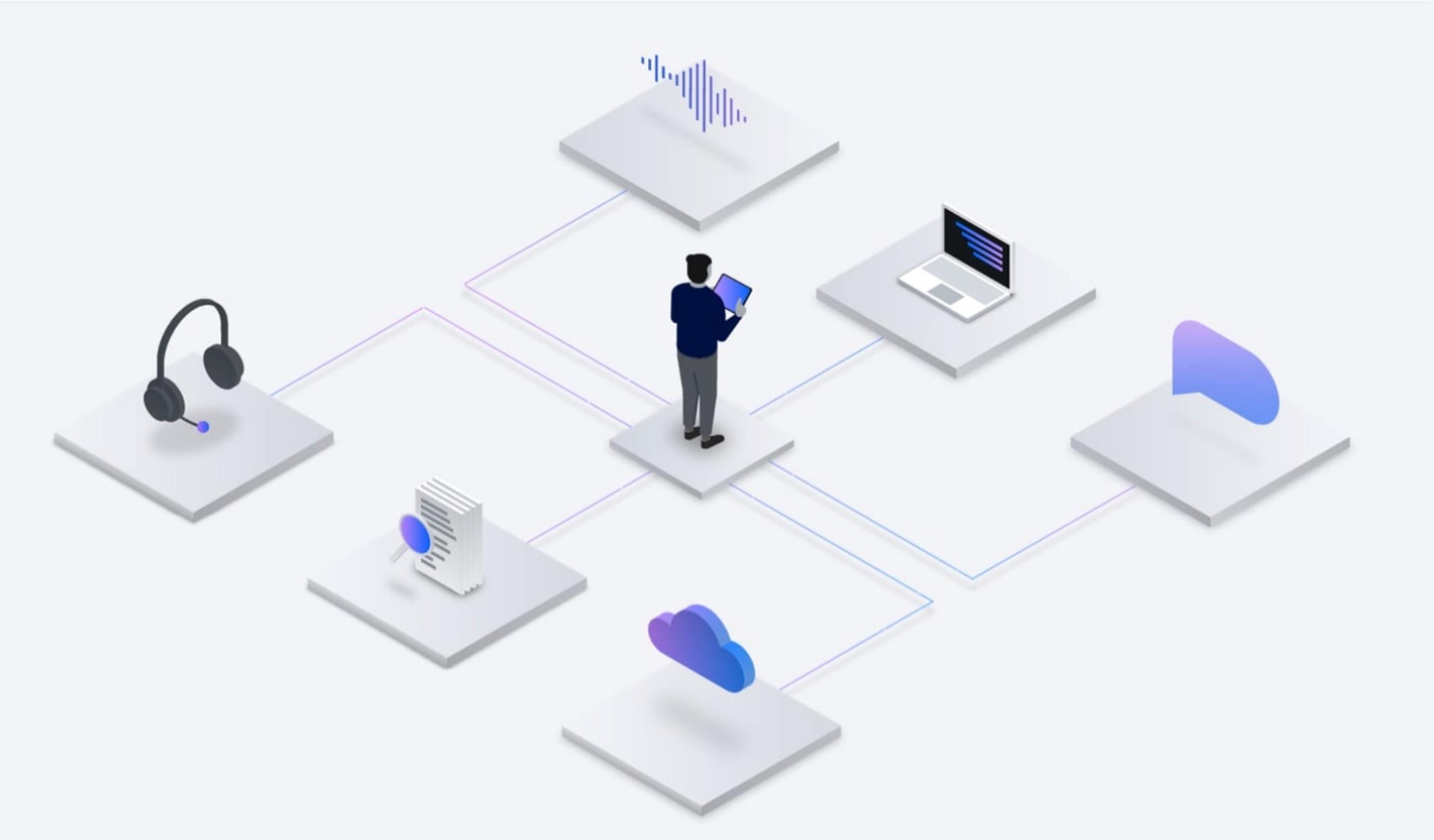
IBM Watson Assistant

DC
Digital Campus

MAKER WEEK

Édition #2023
5 au 9 juin

Vincent Perrin
IBM Ecosystem Technical Director
Vincent.perrin@fr.ibm.com



IBM®



SNCF
Tout'oui

Bonjour ! Je suis **TOUTOUI**, le chatbot chargé de vous aider à déposer et suivre votre demande ou de vous orienter vers le bon service 😊

En cliquant sur Démarrer la conversation vous acceptez que je traite vos données personnelles conformément aux CGU et mentions légales afin de répondre du mieux possible à vos demandes

Démarrer la conversation

Dites-moi quel est l'objet de votre visite, ou laissez-vous guider par les boutons ci-dessous 👇

Train retardé

G30

Suivre / Compléter ma demande

Train supprimé

Problème lors de l'achat

Echange / Annulation billet

Mouvements sociaux

Supprimer mes données

Autres...

+ d'infos sur TOUTOUI

≡ Écrivez ici votre message...

180



IBM Watson Assistant Demo Site

Documentation

Book a Demo

Pricing



Student Loans

Invest in your future. Our student loan options make it easy to take the next step in your education.

[View details](#)

Personal Loans

Working on your next big project? Our personal loans can give you the margin you need to succeed.

[View details](#)

Credit Cards

Grow your business with flexible programs and guidance from our industry-leading team every step of the way.

[View details](#)

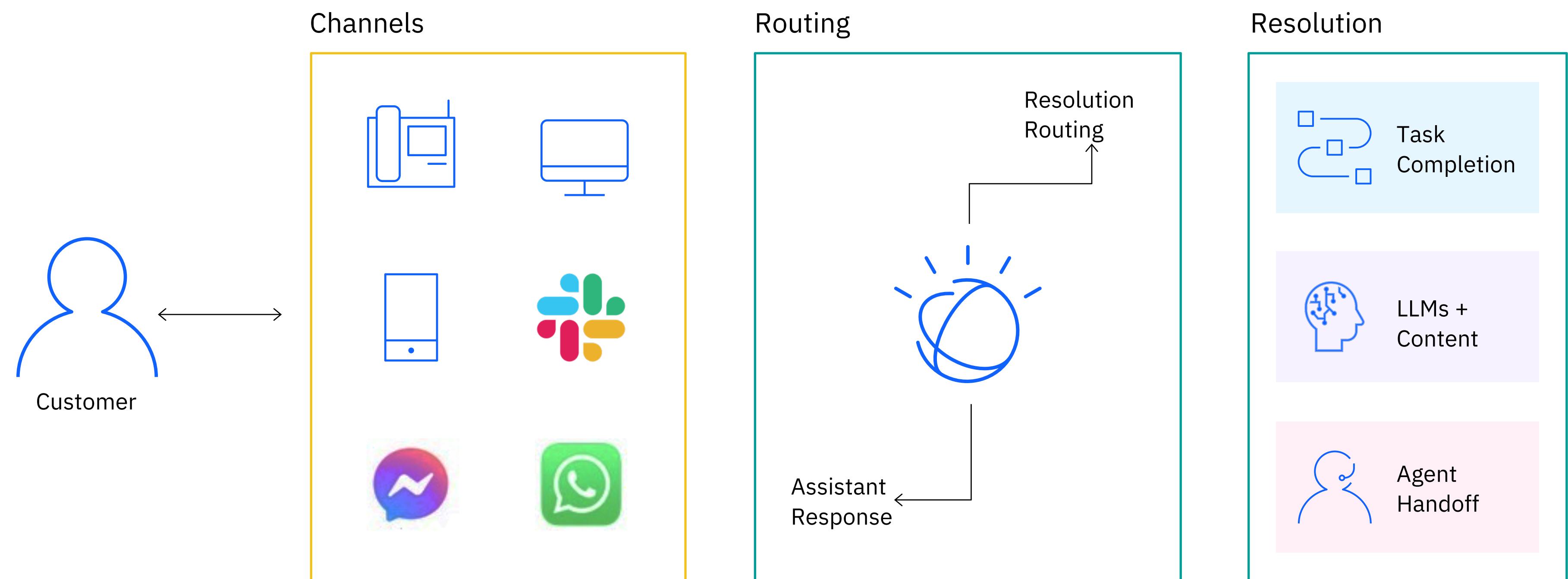
[Close](#)

Worried about finances?
Try our mortgage calculator.

Hi! I'm a virtual assistant.
How can I help you today?



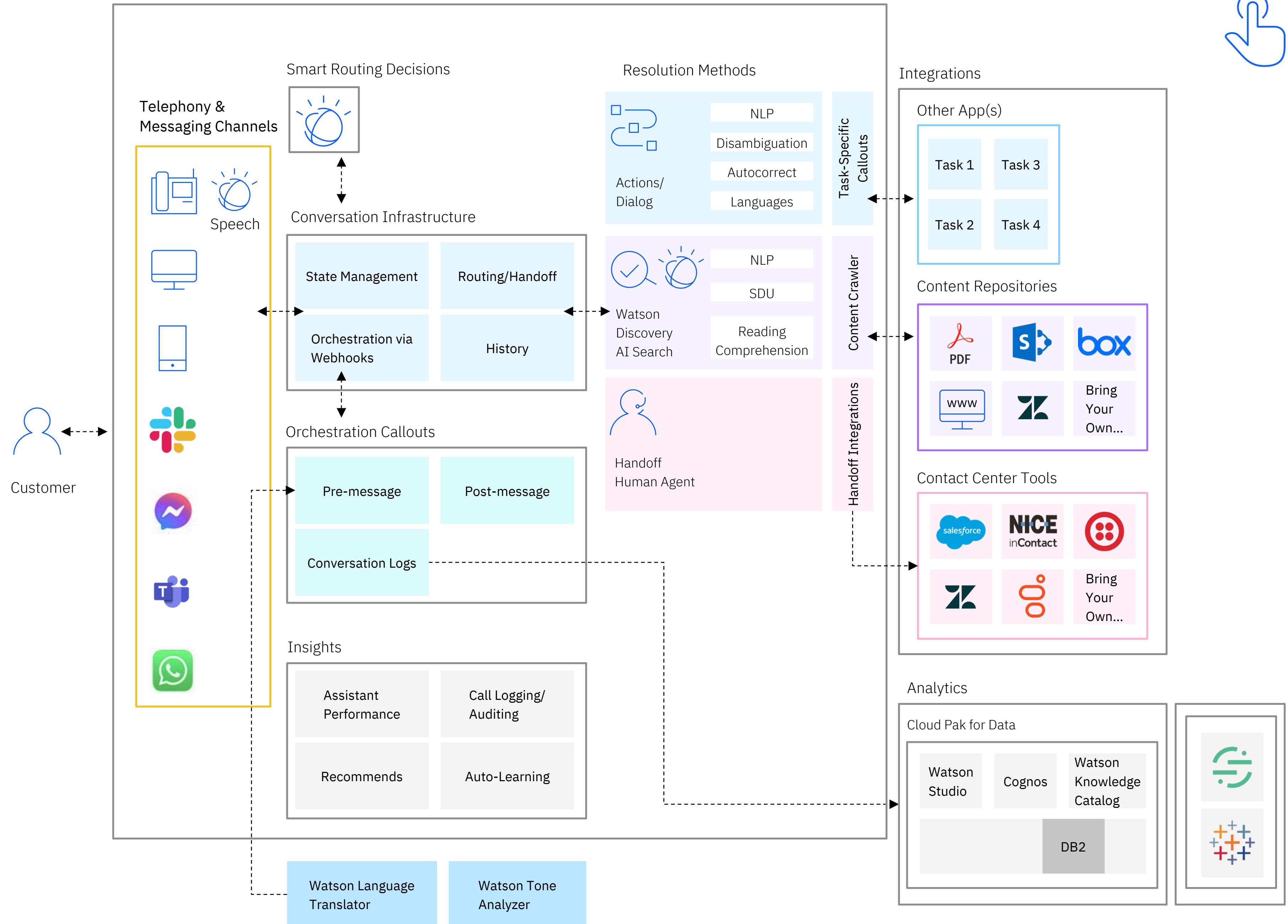
Watson Assistant is IBM's Conversational AI Platform



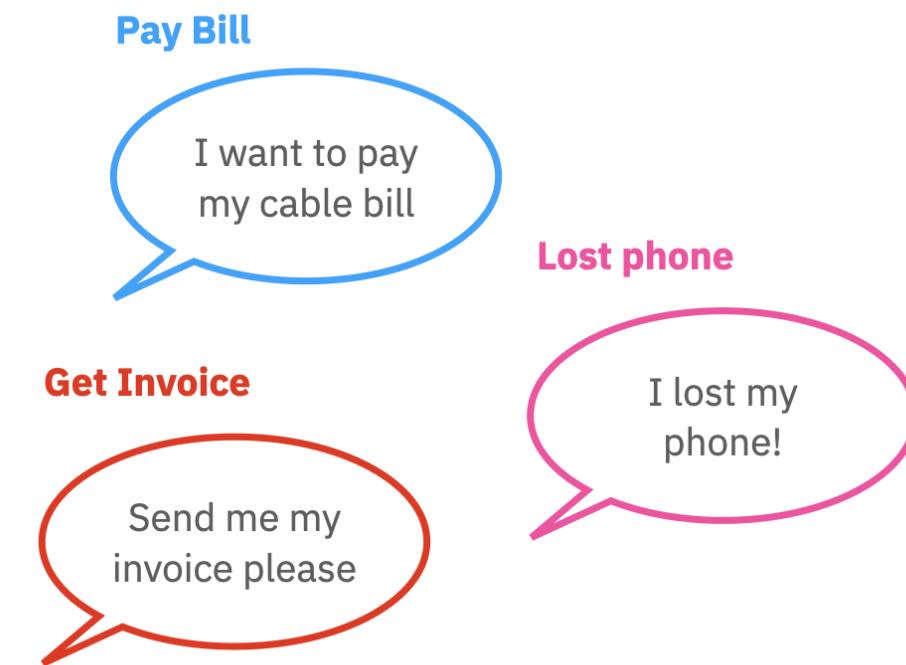
Deliver consistent and personalized experiences **without migrating tech stack**

Unify support with the rest of your business by seamlessly integrating back-end systems and processes with customer channels and touchpoints.

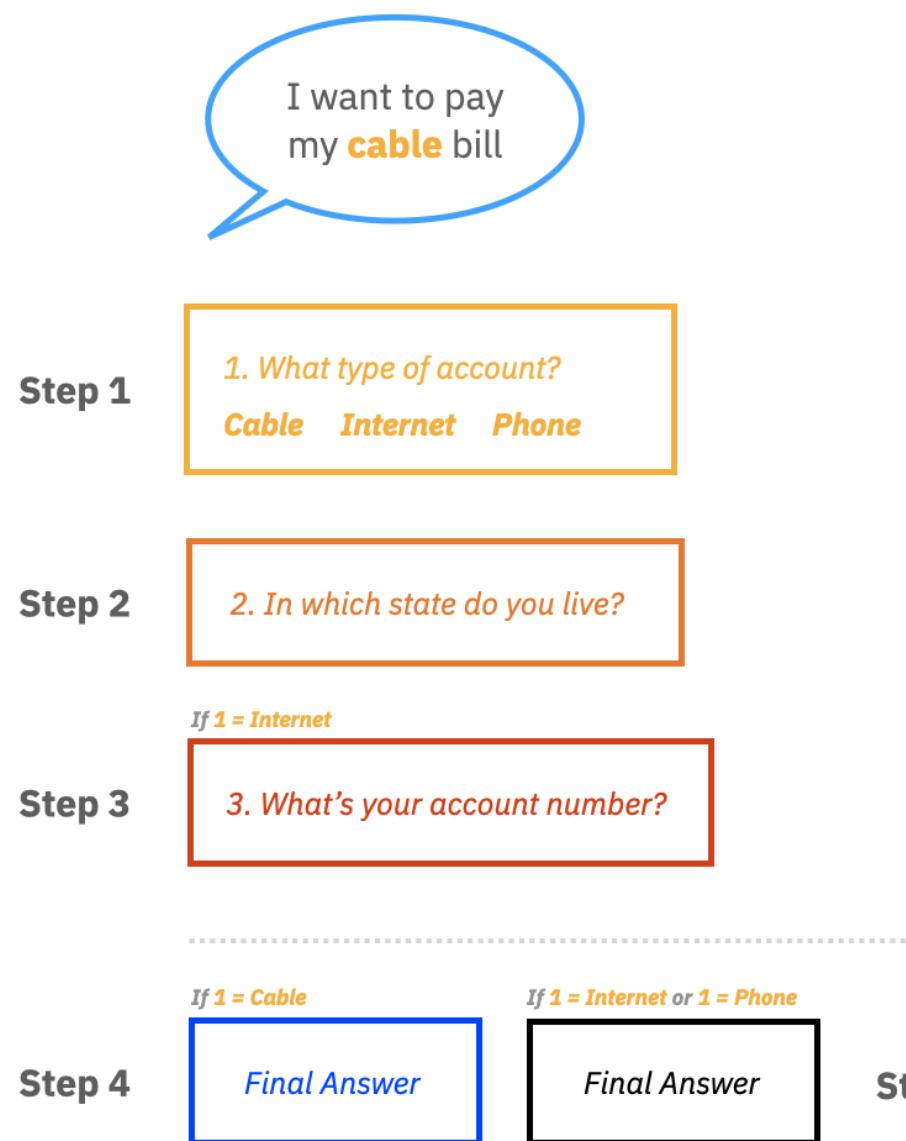
Personalize customer experiences with information from a CRM system, connect to a contact center platform for intelligent routing and agent escalation, connect to your own LLMs or to 3rd-party LLMs, and more.



Actions & Steps



Actions are modular units that contain the initial language recognition for the topic (i.e. the intent) as well as all of the steps needed to complete the action



Steps represent the clarification questions or final answers in the action. Everything else that the step needs to function like the logic, the response options, or the storage of the user's response is contained within it!

Actions

Actions represent the discrete tasks or questions that your assistant is designed to help customers with.

Pay your bill Send

Action started by
Customer messages

5 total steps 1 end step (i) 0 return steps (i)

what account type

1 cable internet + 1

↓ Continue to next step

1 = cable

in which state do you live?

2 alabama alaska + 1

↓ Continue to next step

What is your account number?

3 123 Numbers

Action starts

When your assistant receives a customer message that it has learned to recognize.

Included in disambiguation. [Learn more](#)
You can change this setting from the Actions table.

Training examples

With each example, your assistant learns when this is the right action for what a customer wants.

Enter phrases a person might use to express their goal

I want to pay my bill

how can I pay my cable fees

would it be possible to pay the internet bill

Enter a phrase

Show less

Steps

Step manages the way your bot will provide answer

Easy to
visualize step
content

The screenshot shows a bot builder interface with a sidebar on the left and a main canvas on the right.

Left Sidebar:

- I want to pay my bill
- Action started by: Customer messages

Main Canvas (Step Flow):

- What account type?
1 = Cable (highlighted)
Internet + 1
Continue to next step
- In which state do you live?
2 = Alabama (highlighted)
Alaska + 5
Continue to next step
- What's your account number?
3 = Numbers
Continue to next step
- <Final Answer for Cable bills in Texas>
1 = Cable 2 = Texas
Action complete
- <Final Answer for Cable bills not in Texas>
1 = Cable 2 ≠ Texas

Right Panel (Step Configuration):

- Step 1 is taken:** without conditions
- Assistant says:**
What account type?
- Response type selector:** Rich text editor
- Buttons:** Edit response, Edit validation, Delete
- After showing message:** Continue to next step after assistant response

Rich text
editor

Response
type selector

Respond constraints

Guide the customer to provide the right type of information
–Options (aka entities)

The screenshot shows a conversational flow editor interface. On the left, a sidebar displays the total steps (5), end step (1), and return steps (0). Step 1 is highlighted, showing the question "what account type" and three options: "cable", "internet", and "+ 1". A blue arrow points from this section to a larger window on the right.

Action started by: Customer messages

Step 1 is taken: without conditions

Assistant says:

what account type

Options:

- cable
- internet
- phone

Edit response **Edit validation**

And then:

↓ Continue to next step

Edit response

Options allow your customer to choose from a set of acceptable answers. Add synonyms to create alternate phrases for an option.

Always ask for this, independent of steps that lead up to it

Add synonyms +

Cancel Apply

Respond constraints

Response type	Description	Example input
Options	A list of predefined choices that customers can select from. At run time, the web chat integration shows an options response as a set of clickable buttons or as a drop-down list, depending on the number of choices.	Small Medium Large
Confirmation	A choice of either Yes or No. At run time, the web chat integration shows the Yes and No options as clickable buttons.	Yes, No
Regex	A text response that matches a specified pattern or format (such as an email address or telephone number).	
Number	A single generic number, specified either as numerals (100) or words (one hundred).	100, one hundred
Date	A single specific date or a range of dates.	31 December 2021, 12/31/2020, tomorrow
Time	A single specific time or a range of time.	5:00 PM, now
Currency	An amount of money, including the unit.	\$25, 500 yen
Percent	A fractional numeric value expressed as a percentage.	10%, 50 percent
Free text	Any arbitrary text response.	123 Main Street, John Q. Smith

user input validation

Validation helps customers understand what is expected from them

Action started by
Customer messages

5 1 0
total steps end step return steps

what account type

cable internet + 1

↓ Continue to next step

1 = cable

in which state do you live?

alabama alaska + 1

↓ Continue to next step

Edit validation

Set what happens when a reply doesn't meet accepted response values. After the last try, your assistant will redirect the customer to alternative help.

Validation message

I didn't catch that. Select or enter one of the options above.

Number of tries

3

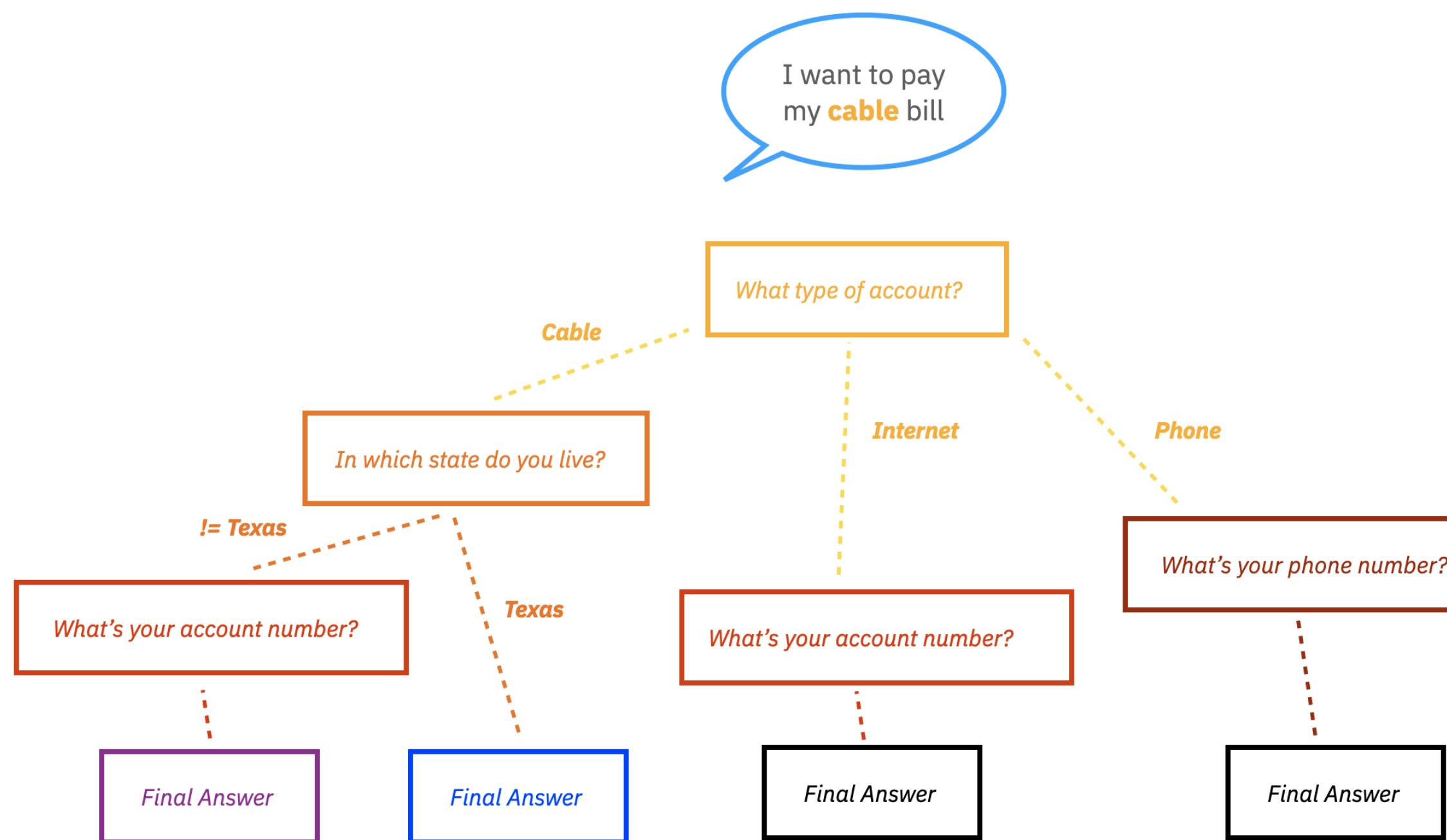
Message after the last try

I'm afraid I don't understand. Let me see if I can help another way.

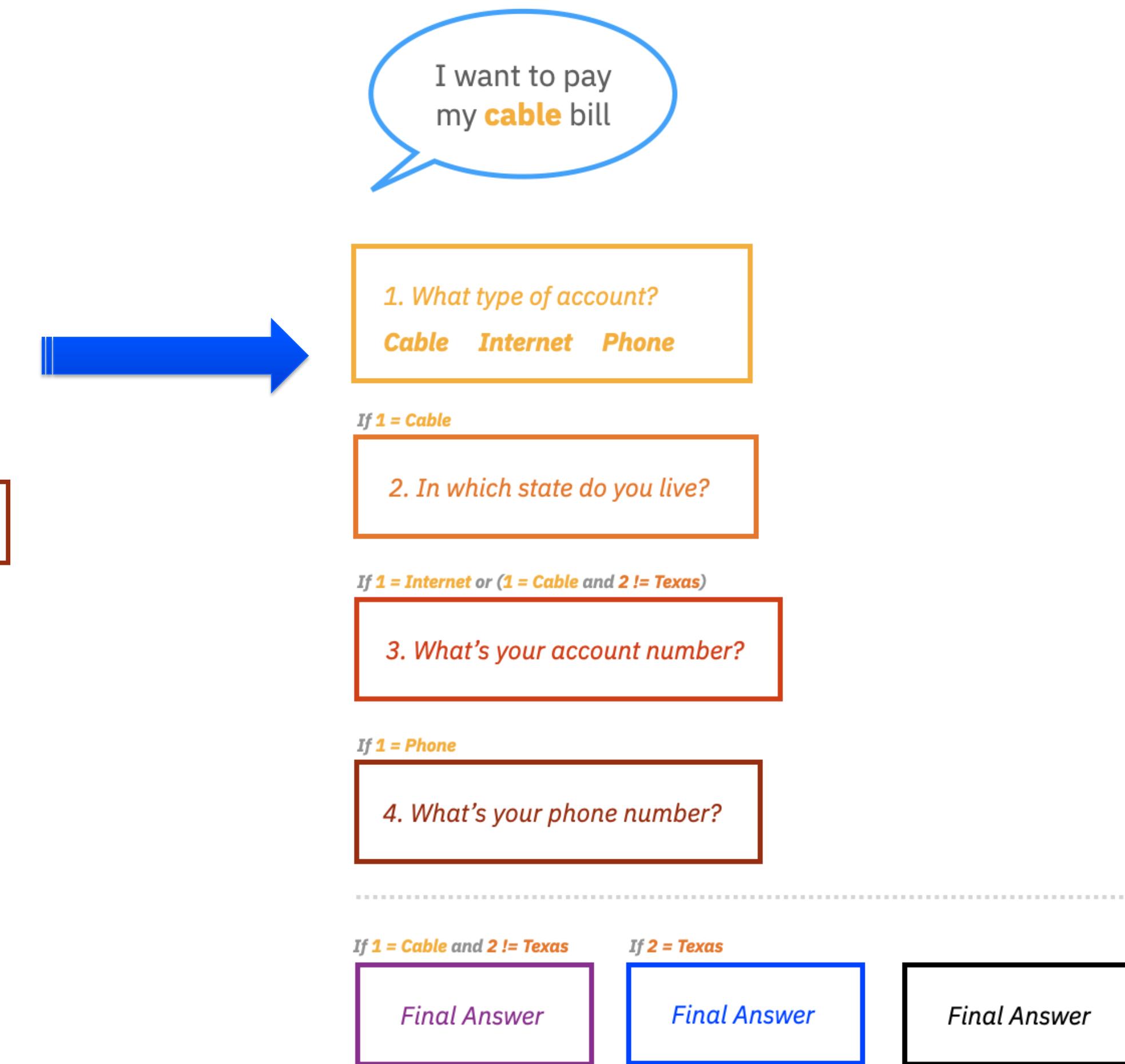
Cancel Apply

Navigation Process

Process



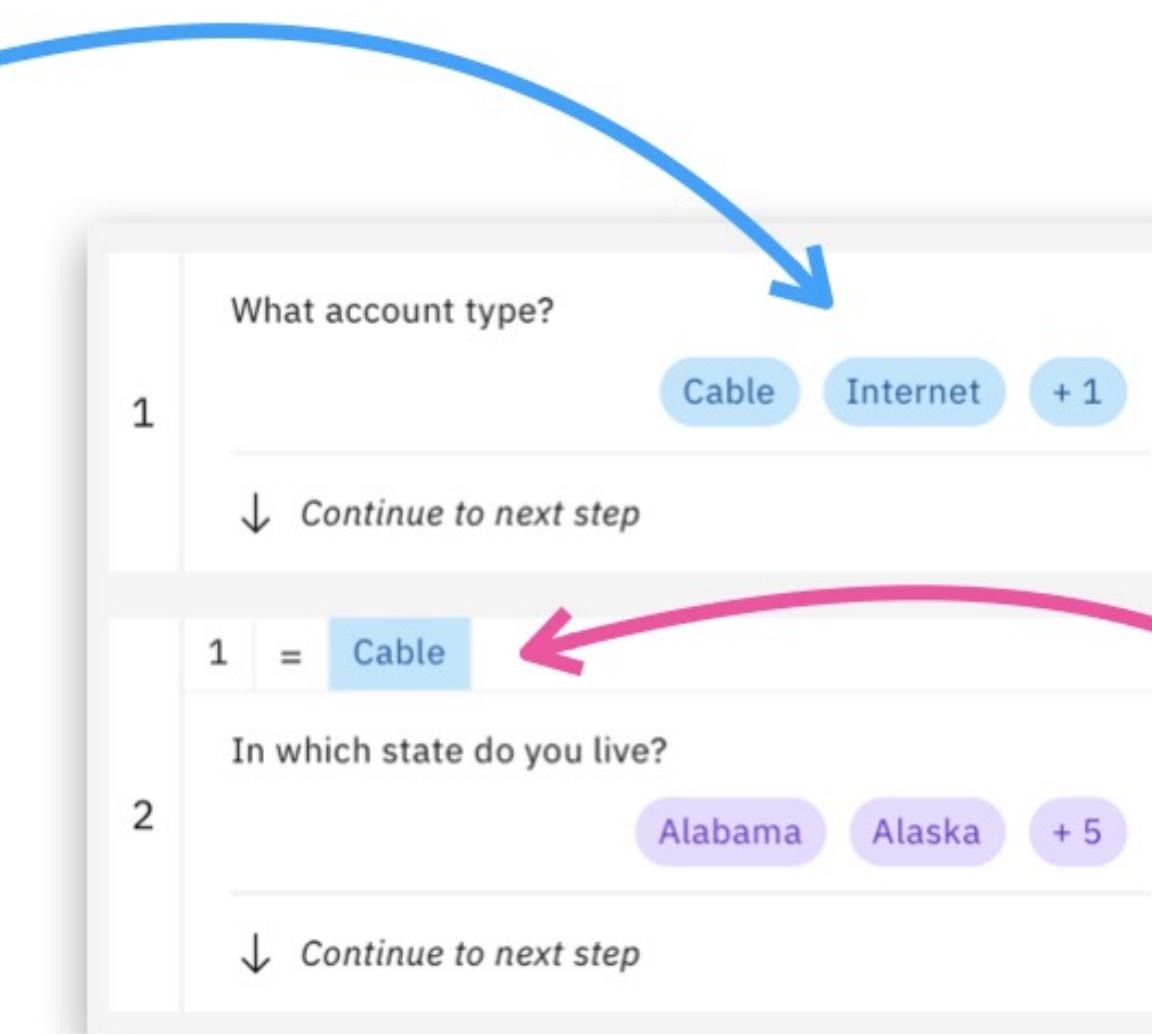
Representation



Navigation : reducing Redundant Concepts

Action Variables (aka Entity + context variable).

Button options and natural language recognition (entities) are built in to each step



Steps can reference answers to other steps

Navigation: What to do next?

Continue to next step	Processes the next step in the steps list. the conditions for the next step are evaluated first to determine whether to show the step's response to the customer.
Re-ask previous step(s)	Processes a step that is listed earlier in the current action. The step might be one that the customer already completed or one that was skipped previously based on its step conditions. (Any variable values of intervening steps are reset.
Go to another action	Switch the conversation flow to another action to perform a certain task. If you have a portion of an action that can be applied across multiple use cases you can build it once and call to it from each action.
End the action	Indicates that this action is complete. Any variable values are reset. This option can be applied to more than one step.
Use an extension	calls an extension that has been added to your assistant in order to interact with an external service.
Search for the answer	Finds a useful response from existing help content and knowledge bases that you own. The actions skill calls your search skill.
Connect to agent	Transfers the conversation to a member of your support team. Requires that you have a service desk capability configured.

Navigation : Easy to use

Drag and drop re-ordering of steps

The screenshot shows a conversational flow with five steps:

- Step 1: "What account type?" with options "Cable", "Internet", and "+1". Below it is a button "↓ Continue to next step".
- Step 2: "What's your account number?" with a "123 Numbers" placeholder. Below it is a button "↓ Continue to next step".
- Step 3: "In which state do you live?" with options "Alabama", "Alaska", and "+5". Below it is a button "↓ Continue to next step".
- Step 4: "1 = Cable" and "2 = Texas". Below it is the message "<Final Answer for Cable bills in Texas>" and the status "Action complete".
- Step 5: "1 = Cable" and "2 ≠ Texas". Below it is the message "<Final Answer for Cable bills not in Texas>".

A blue dashed box highlights the second and third steps, indicating they can be reordered.

The screenshot shows the configuration for Step 4, which is taken with conditions:

Conditions (2 conditions)

1. All of this is true:
 - If "What account type?" is "Cable"
 - and "In which state do you live?" is "Texas"
 - and Add condition +
2. New group +

Assistant says

<Final Answer for Cable bills in Texas>

Define customer response

After showing message:

The visual condition builder makes it easy to change step logic

Clarifying user's intents : Question Skipping (aka slot)

Account type (cable) is provided in the first user's input



Skill the first step to require the first missing data



Name	Entity	Prompt
Account Type	@account_type	<i>What type of account?</i>
Location	@location	<i>In which state do you live?</i>
Account Number	@account_num	<i>What's your account number?</i>
<i>Final Answer</i>		

Clarifying user's intents : Disambiguation

Disambiguate a user's utterance (Did you mean....).
WA uses **machine learning** to ask for user's input if it can't decided the best intent.

Business benefit: end-user will be provided with clearer answers and fewer "I don't know" responses or handoffs to live agents from your assistant

Skill settings

Disambiguation

Your assistant can ask for clarification when multiple actions seem to match what the customer wants. [Learn more about disambiguation](#)

On

Assistant says
Before listing the choices

Did you mean:

Label for a fallback choice
Leave blank if you don't want to give a fallback choice

None of the above

What's this? A fallback choice appears last and can be useful if your customer doesn't see any relevant choices. When selected, your assistant will take the default action to "Retry when no action matches."

Close Saved

Example of disambiguation

Important Make sure your action names are short and clear to your customers. Action names will appear in the list of choices.

ACME Bank

open an account

Did you mean:

Open a new savings account
Open a new checking account
I want to apply for a mortgage loan
None of the above

Assistant preview

Good Afternoon!
I am Watson. I can answer questions about the Hotel.
How can I help you today?

I am looking for a pizza

| Did you mean:

I want to order a pizza

I am looking for a restaurant

None the above

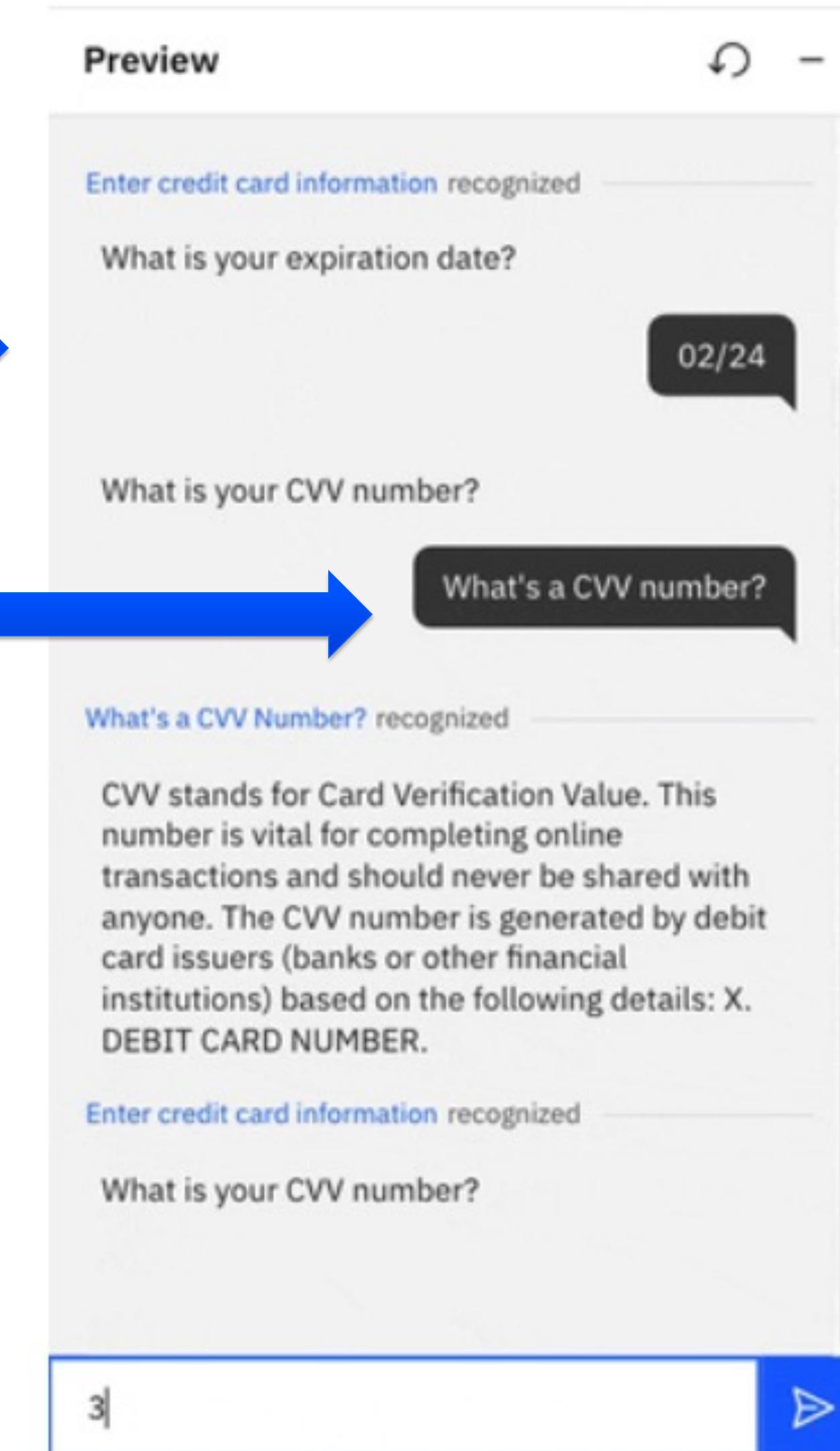
Type something... →

Clarifying user's intents : Changing topic (aka Digression)

Current process



New topic



Summary

Actions are made of **steps**, which represent a “turn” in the conversation – **increased focus on content rather than config or logic**

Steps are constructed in a **linear order with optional “filter” conditions**

Combines **four separate concepts into one logical construct**

Slots

Content variables

Entities

Options response types

The screenshot shows the 'Withdraw Action' configuration in the IBM Watson Assistant Lite interface. The left panel displays the step flow: 1. Action started by Customer messages, asking 'What account would you like to withdraw money from?' with options 'Checking Acc...' and 'Savings Acco...'. 2. Step settings: 'if all of this is true' condition 'What account would you like to withdraw ... is Checking Account'. 3. Step 2: 'How much would you like to withdraw?' with options '\$100', '\$500', and '+ 2'. 4. Step 3: Confirmation message 'Okay, let me confirm. Do you want to withdraw Step 2 from your checking account?' with 'Yes' and 'No' buttons. 5. Step 4: 'Great, we will send you the funds' with 'Action complete' checked. The right panel shows the 'Preview' of the conversation: 'Greet customer' followed by 'Welcome, how can I assist you?' and 'I want to withdraw money'. Below the preview, the 'Withdraw Action' configuration is shown again with the condition 'What account would you like to withdraw ... is Checking Account'.

Process to design a Bot

- Getting Started with a conversational solution
 - Defining the **purpose**
 - Knowing your **target end users**
 - Selecting **domain and topics**
 - Selecting **Channels**
- Positioning a conversational solution
 - Identifying the **view point**
 - Specifying the **proactivity / reactivity**
 - Defining **tone and personality**



A bot should have a
clear purpose,
a well-defined job to do

Explicitly defining the purpose will help you
design a coherent solution that
meets **your needs** and the needs of your **end users**

Select a clear topic domain that assistant can help unify and automate (Payment support, Billing ...)

Talk with the reps closest to this domain, identify the most frequent topics they handle where the response is mostly informational in nature

Channels for Conversational Agents

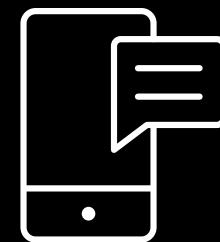


Customer Service



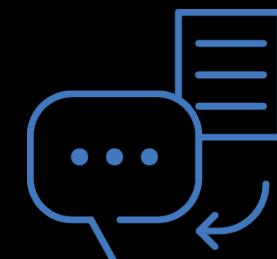
Add a chatbot to your website that automatically responds to your customers' most frequently asked question

Mobile Apps



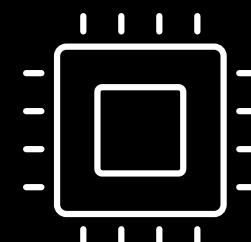
Allow your customers to control your mobile app using natural language virtual agents

Messaging Channels



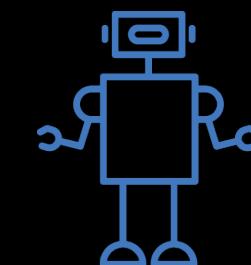
Build Twitter, Slack, Facebook Messenger, and other messaging platform chatbots that interact instantly with channel users

Internet-of-Things



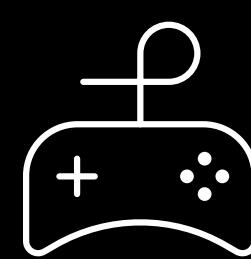
Power connected devices to understand language and respond to your users' commands

Robot



Power your robots with natural language understanding and conversational capabilities

Gaming



Power your games with natural language understanding and conversational capabilities

Viewpoint is the role the solution should adopt
in relation to the end user –
where the solution ‘sits’ in relation to
the end user and the client ...

It's vital to correctly identify the viewpoint that
the solution should have

The wrong viewpoint is jarring for end users –
at worst, it undermines the purpose
of the solution

Proactivity is the degree to which the solution proactively engages and guides the user, rather than reactively sitting back and waiting for the user to ask a question

Together, purpose, viewpoint and proactivity
help ensure a consistent and coherent user experience,
which in turn
encourages trust, confidence and engagement

The **tone** and **personality**
of your Watson implementation will have an impact
on how successful it is

Tutorial

- [Plan it](#)
- [Part I: The build guide](#)
- [Part II: Refine your assistant](#)
- [Part III: Test and deploy](#)
- [Part IV: preview, draft, publish, live](#)

To go further

How To Create Actions With IBM Watson Assistant

- <https://cibusgreyling.medium.com/how-to-create-actions-with-ibm-watson-assistant-8947b62a3efa>

Lab Banking Assistant (Français)

- https://github.com/vperrinfr/ptech_IBMFR/blob/master/banking.md
- https://github.com/vperrinfr/ptech_IBMFR/blob/master/banking_2.md

