

# Walmart

Converse – Conversational AI platform

03/09/2020

## Speakers

*Sriprabha Gopalan*

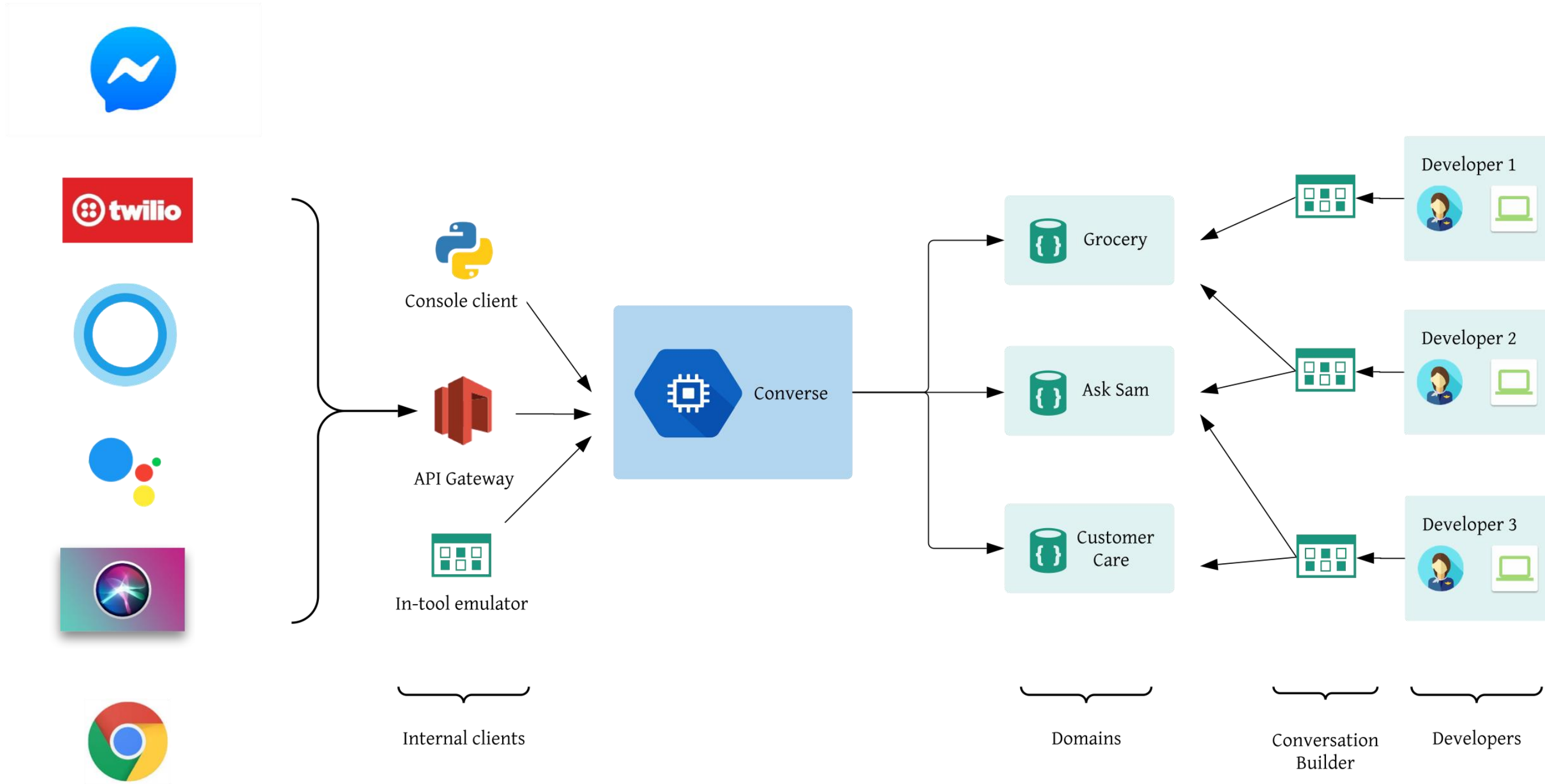
*Akshay Kumar*

*Priyanka Bhatt*

*Badrinath Kulkarni*

*Converse is a multi-tenant Conversational AI platform built for enabling Conversational Commerce across different channels like chatbots, smart devices, apps and AI assistants.*

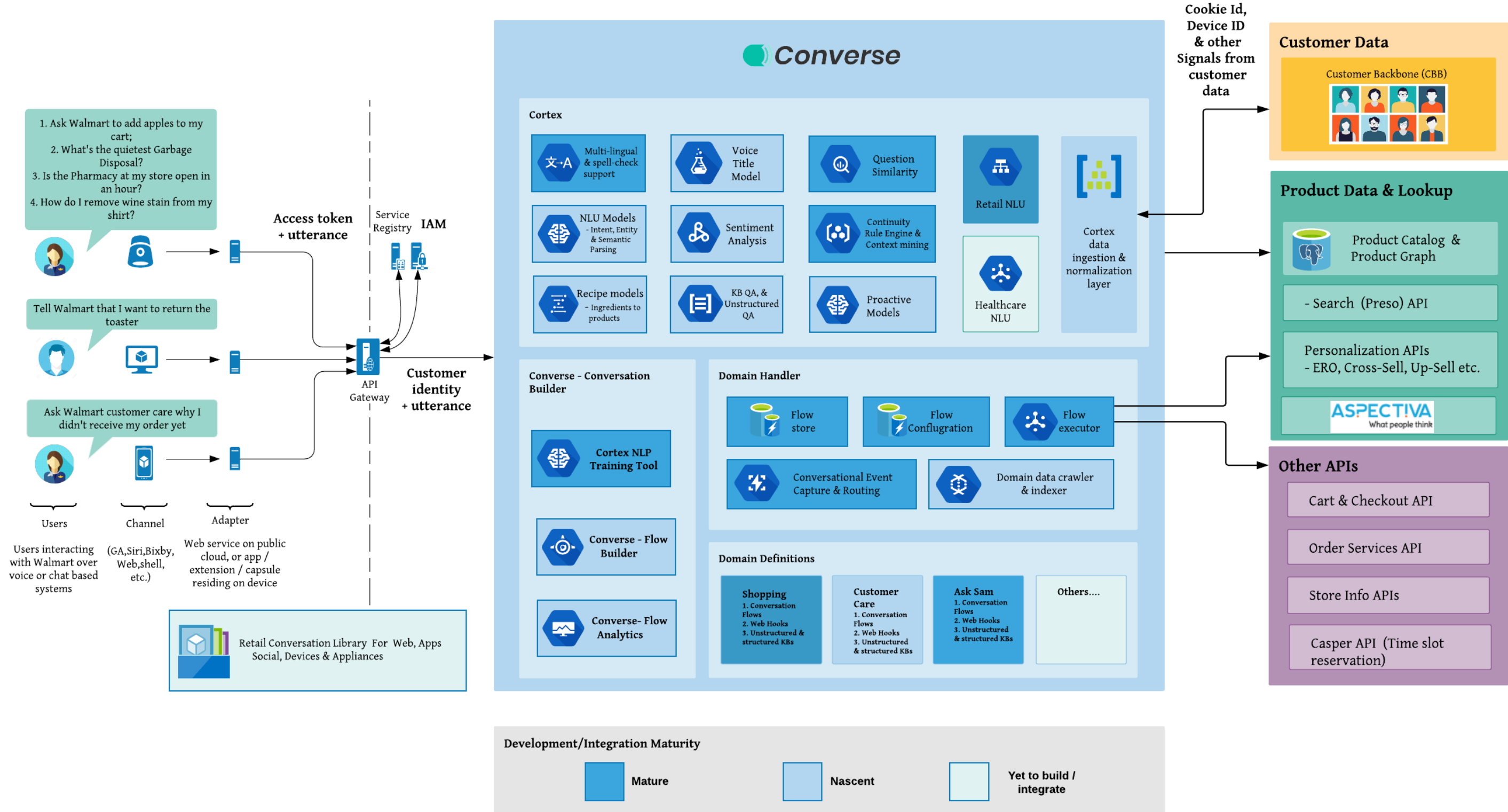
# Converse Ecosystem

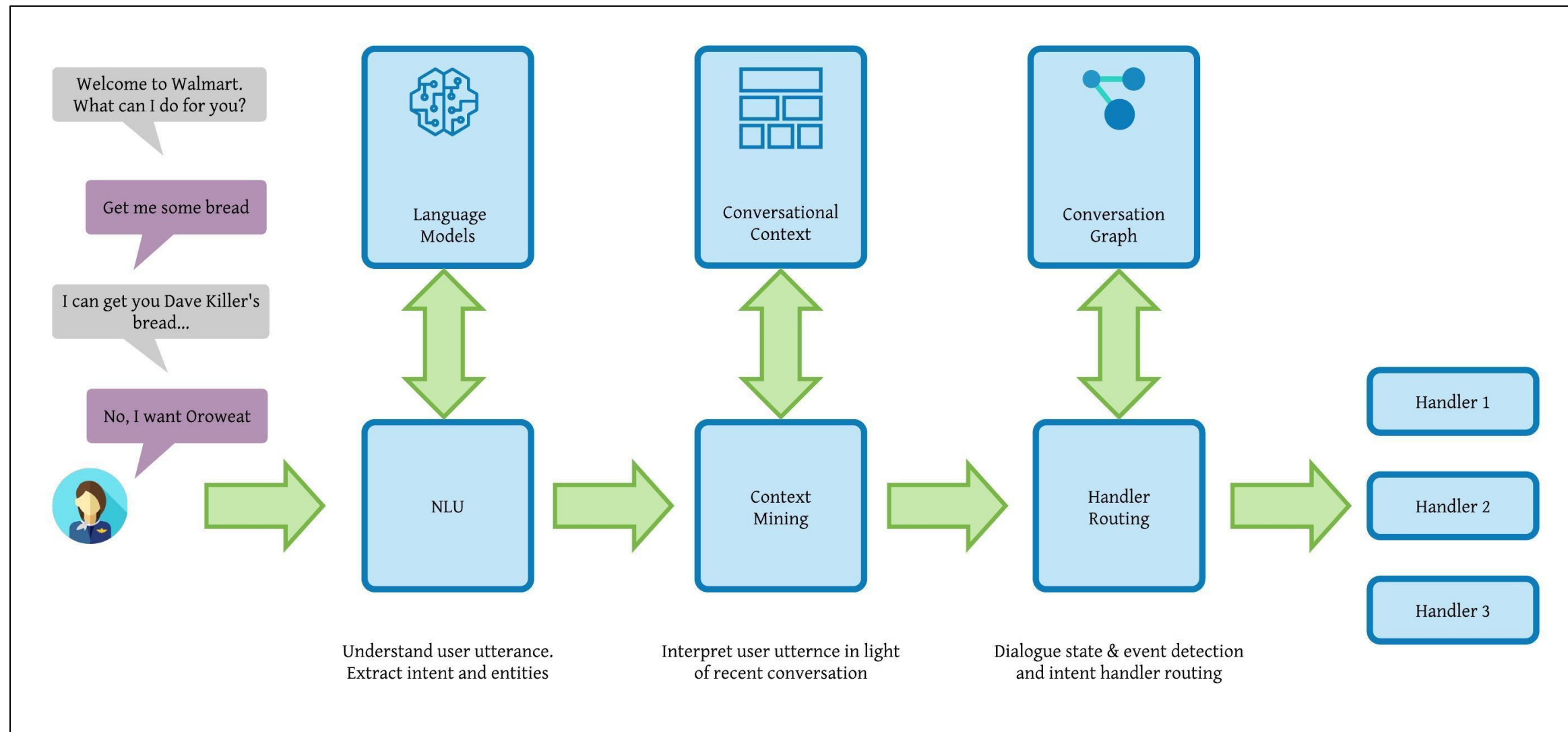


Domain	Description	Status
Walmart Voice Order - Google Assistant	Grocery shopping on Google Assistant	Live
Walmart Voice Order - Siri	Grocery shopping via Siri integration	Live
Ask Sam (Walmart US)	Voice assistant for store associates	Live
Customer Care Chat - Walmart.com	Routing help center chat users to appropriate flows using NLU models	Live
Shopping assistant on Text	Text based shopping for membership (Walmart Plus) customers	Beta Phase
ASDA Customer Care	Customer care chatbot on ASDA website	MVP ready – Launch Q3 FY 21
Mexico Customer Care	Customer care chatbot on WhatsApp	MVP ready – Launch Q3 FY 21
Canada Customer Care	Customer care chatbot on Walmart Canada website	MVP in development – Launch Q3 FY21
Google Business Chat	Chatbot on Google Maps/Search page for Walmart	MVP in development – Launch Q3 FY 21
Facebook messenger bot	Messenger bot on Walmart's Facebook page.	MVP in development – Launch Q3 FY 21
Global Data	Voice assistant for the data dashboard used by business/finance/etc.	MVP in development – Launch Q3 FY21
Store IVR	Handle phone calls coming into Walmart Stores	POC Ready
UpFront	Voice support on the UpFront app used in Stores POS	POC Ready
Seller bot for Marketplace	Chat bot for Seller portal	Discussions
Associate Support Chat	Chat bot for Walmart e-Commerce Associates	Discussions
Ask Sam (International)	Voice assistant for store associates	Discussions

The background is a solid blue color with several light blue, rounded rectangular shapes scattered across it. These shapes are oriented in various directions, some pointing towards the center and others away from it, creating a dynamic, abstract pattern.

# Converse Architecture

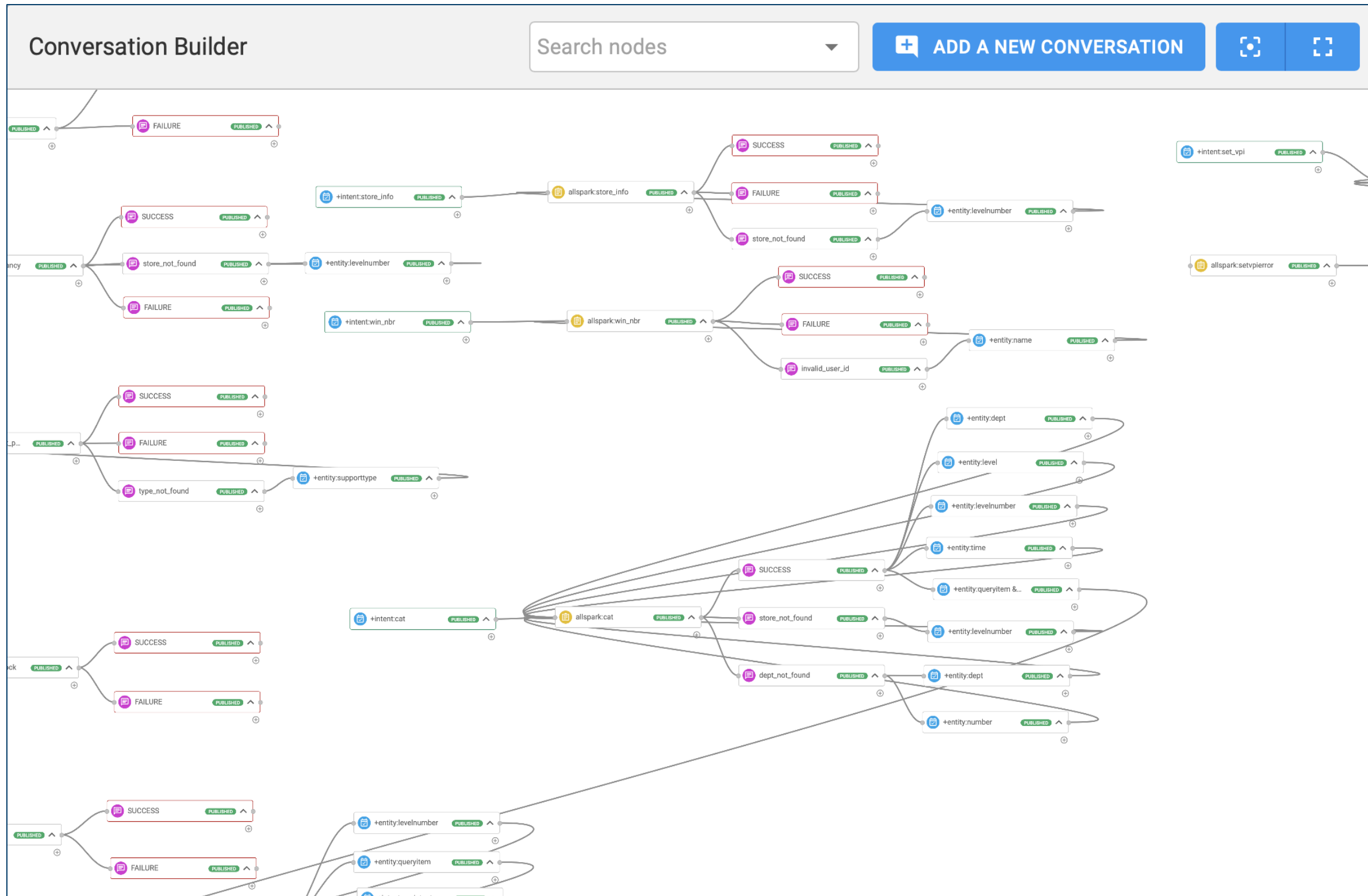






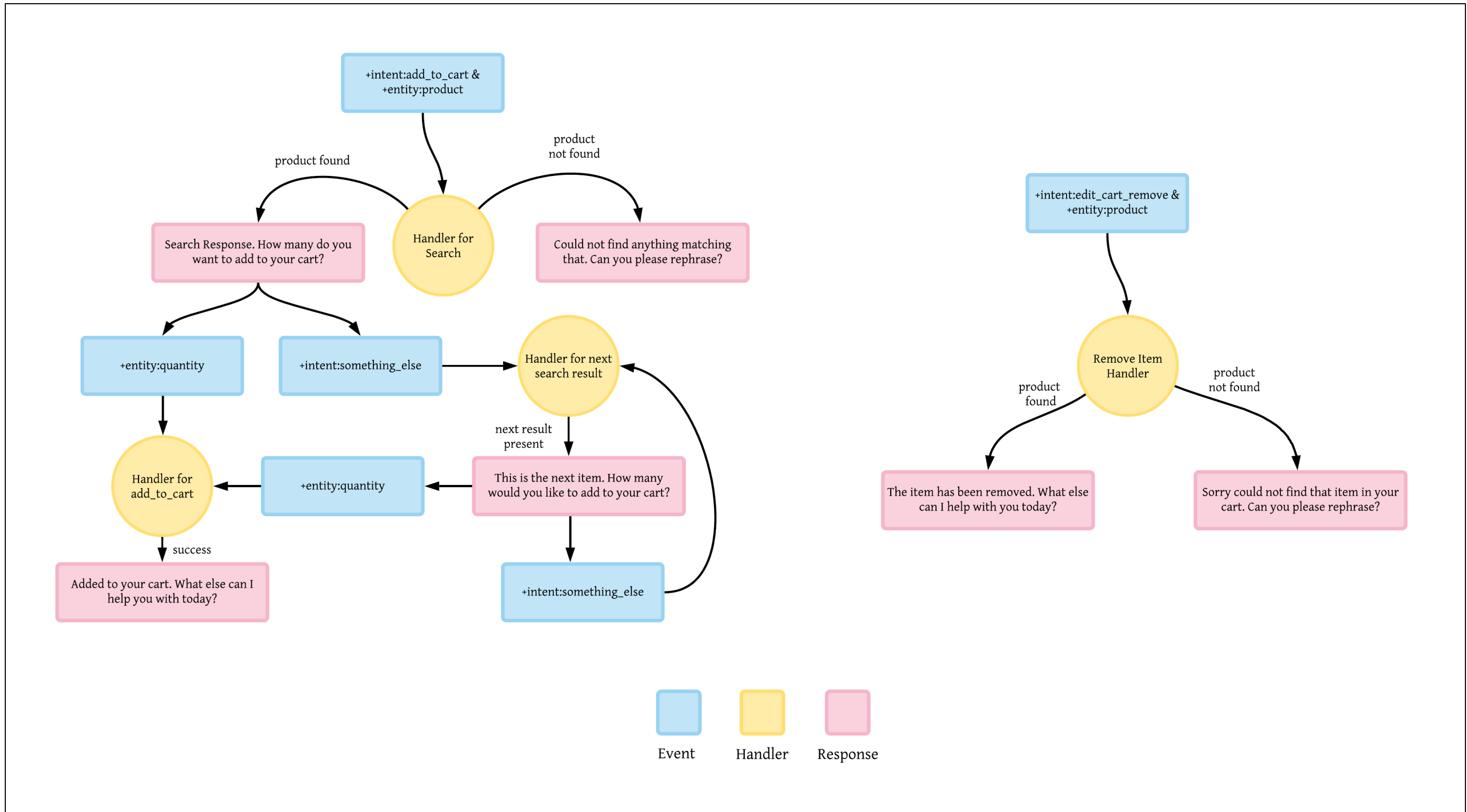
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# Converse Platform features



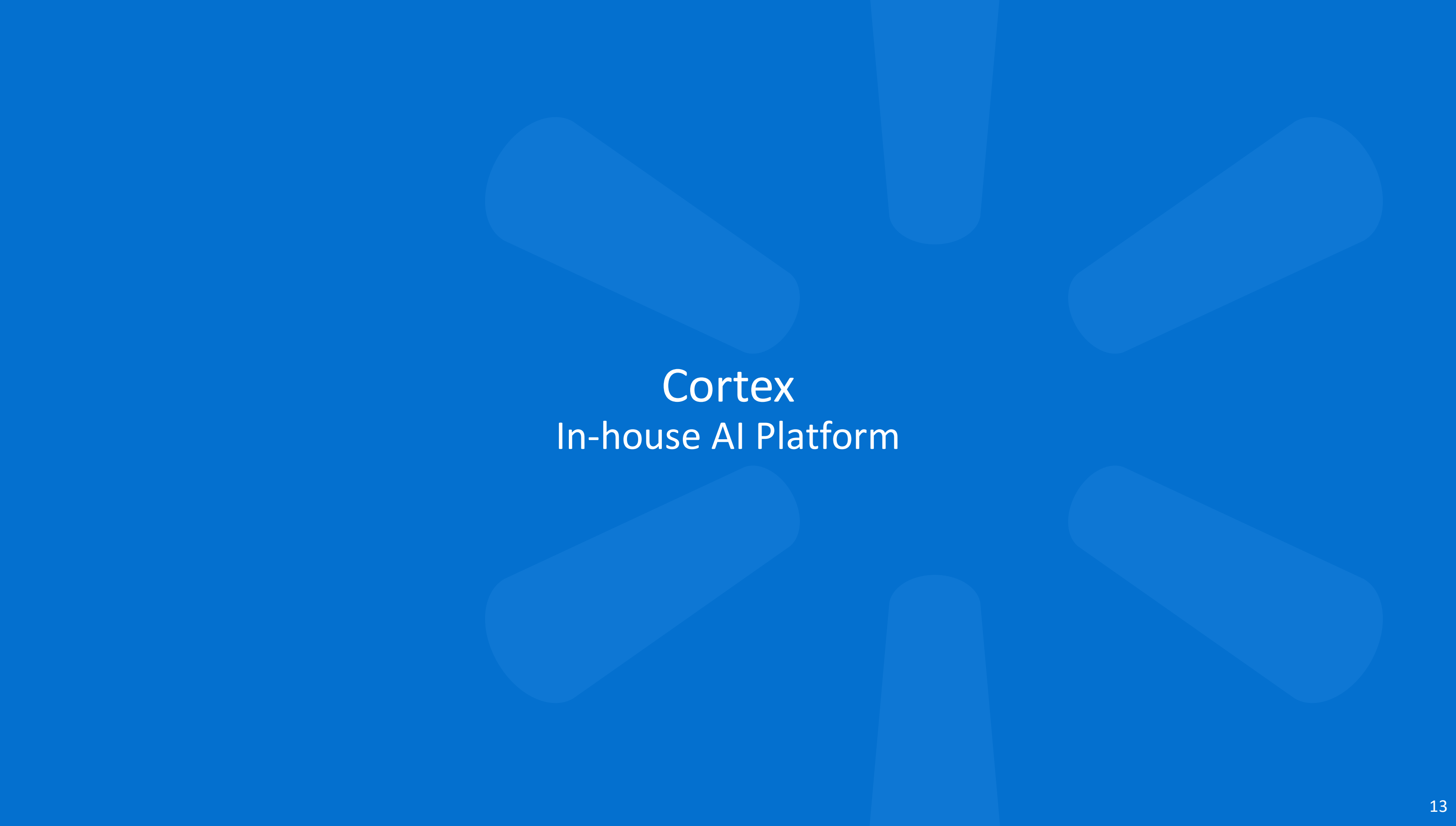
> Smart **multi-turn conversations** through context mining

> Intuitive conversation design using **conversational state transition graphs**



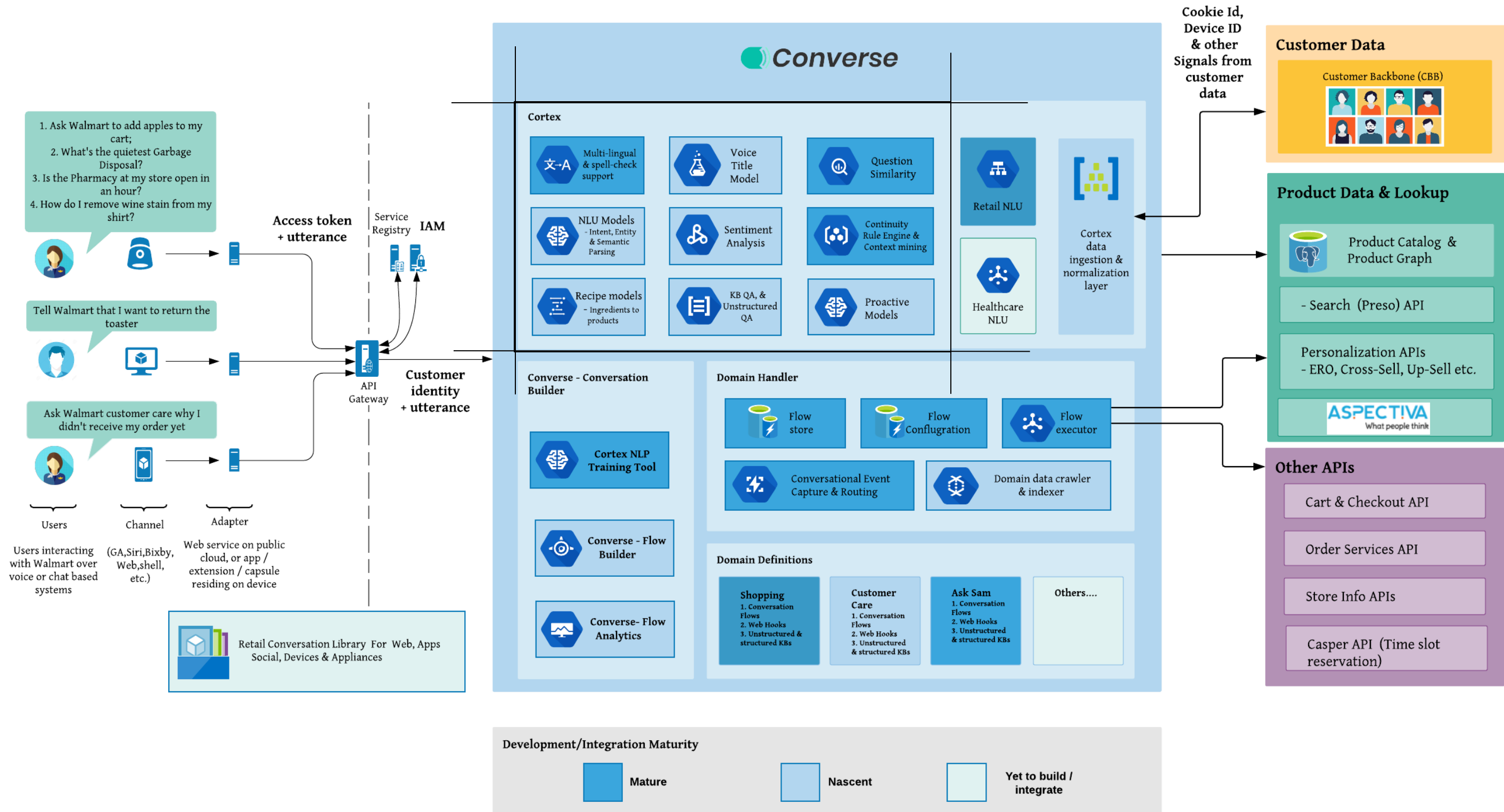


- **Multi-modal inputs** through text or voice
- **Multiple input channels** like apps, smart devices, web chat, chrome plugin, AI assistants, etc.
- **Multiple action planes** for inferencing and intent processing; both can happen on device, on Converse or in any other combination
- **Seamless action transfer across devices**; voice commands on smart device can complete action on app

The background of the slide is a solid blue color. It features several decorative elements: six light blue rounded rectangles arranged in a circular pattern around the center, and a vertical light blue bar at the top center.

# Cortex

## In-house AI Platform



Model Objective: Understand user intent *from* utterance.

User utterance

i ordered these knives from you over a week ago. they were to arrive no later than yesterday. monday, they said that the order was getting ready. today it says that there is a further delay. this was supposed to be a birthday gift yesterday. what the heck is going on?????



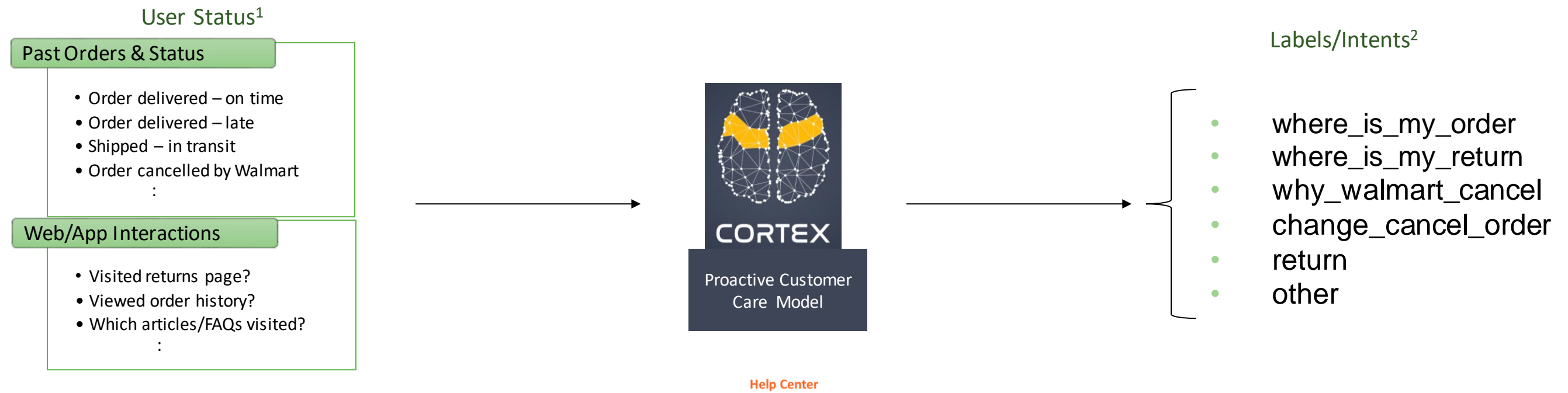
Label/Intent\*

- where\_is\_my\_order
- where\_is\_my\_return
- return
- why\_walmart\_cancel
- change\_cancel\_order
- product info
- fraud
- gift\_card
- other
- agent\_contact
- promo\_code
- affirmative
- negative
- greet
- next
- stop

\* For Walmart.com Customer Care

Model Objective: Understand *implicit* user intent *before* utterance.

Scenario:  
Customer ordered a coffee machine 2 weeks back. But 3 hours back, the customer was notified that the order has been cancelled by Walmart. Customer now visits help center.

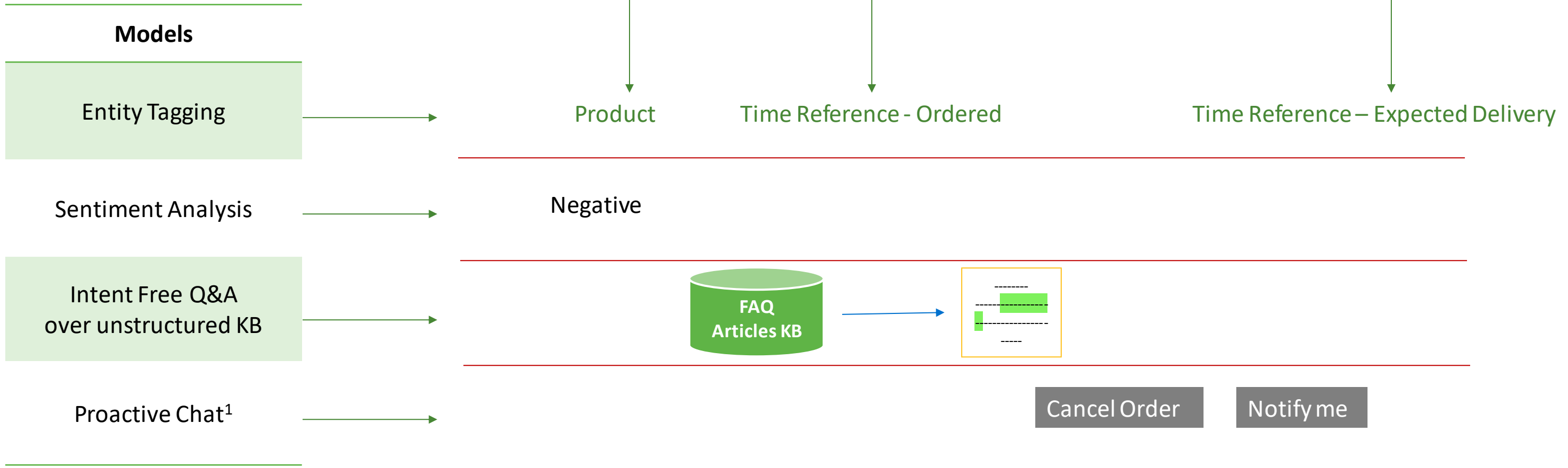


<sup>1</sup> Integration with CBB

<sup>2</sup> For Walmart.com Customer Care



i ordered these knives from you over a week ago. they were to arrive no later than yesterday. monday, they said that the order was getting ready. today it says that there is a further delay. this was supposed to be a birthday gift yesterday. what the heck is going on?????



<sup>1</sup>Proactive Customer Care v/s Proactive Chat:  
Context: Past orders and web/app interactions v/s  
Context: Evolving user intent within chat

## Customer Care Domain

	Cortex			LUIS			Dialogflow			RASA		
	Precision	Recall	F1-score	Precision	Recall	F1-score	Precision	Recall	F1-score	Precision	Recall	F1-score
None	0.92	0.89	0.91	0.88	0.83	0.85	0.92	0.81	0.86	0.90	0.84	0.87
FAQ: Available Promo Codes	0.95	0.98	0.96	0.92	0.97	0.95	0.88	0.98	0.93	0.91	0.97	0.94
FAQ: Expedited Shipping	0.95	0.97	0.96	0.94	0.92	0.93	0.97	0.97	0.97	0.93	0.97	0.95
FAQ: General Shipping Policy	0.88	0.91	0.90	0.76	0.86	0.81	0.79	0.86	0.82	0.78	0.81	0.79
WISMO	0.89	0.94	0.91	0.87	0.80	0.83	0.84	0.93	0.88	0.86	0.92	0.89
FAQ: Accepted Payment Methods	0.95	0.96	0.96	0.89	0.95	0.92	0.86	0.97	0.91	0.94	0.99	0.96
WISMR	0.95	0.98	0.96	0.88	0.89	0.89	0.85	0.95	0.90	0.80	0.95	0.87

## Shopping Domain

	CORTEX BERT PROD MODEL				RASA				CORTEX BERT PROD MODEL				RASA				
	support	precision	recall	f1-score	precision	recall	f1-score		support	precision	recall	f1-score	precision	recall	f1-score		
								0.64							0.59	0.55	0.57
								0.95							0.86	0.98	0.92
product	11033	0.981	0.9924	0.9867	0.9856	0.9868	0.9862	0.79	atc_buy	1116	0.97	0.99	0.98	0.96	0.97	0.97	0.75
quantity	3201	0.9926	0.9991	0.9958	0.9941	0.9935	0.9938	0.96	set_pickup	1061	1	1	1	0.95	1	0.97	0.78
fulfillment	2667	0.9989	0.9989	0.9989	0.9959	0.9989	0.9974	0.95	search	1014	1	1	1	0.99	1	1	0.94
unit	2007	0.9975	0.997	0.9973	0.994	0.9921	0.9931	0.91	entity_inte	980	0.99	0.97	0.98	0.98	0.91	0.94	0.90
brand	1449	0.9217	0.9503	0.9358	0.9542	0.9529	0.9535	0.65	prod_info_	595	0.99	1	0.99	0.99	1	0.99	0.90
timerefer	1333	1	1	1	0.9903	0.9948	0.9925		cancel_pic	574	1	1	1	0.98	1	0.99	0.74
type	1240	0.9697	0.954	0.9618	0.9366	0.9381	0.9373		item_upda	573	1	1	1	0.99	1	1	0.56
storerefer	1185	1	0.989	0.9945	0.8996	0.9679	0.9325		amend_ord	571	1	0.95	0.98	0.99	0.95	0.97	
city	895	0.965	0.9855	0.9751	0.9765	0.9765	0.9765		brand_sear	569	1	1	1	1	1	1	
size	866	0.9942	0.9908	0.9925	0.9628	0.9839	0.9732		cancel_ord	567	1	1	1	0.98	1	0.99	
street	773	0.9909	0.9884	0.9896	0.9618	0.9755	0.9686		order_tota	562	1	1	1	0.98	1	0.99	
timeofday	764	0.852	0.8364	0.8441	0.9669	0.9948	0.9806		feedback	561	1	1	1	0.99	1	0.99	
ordinal	608	1	1	1	1	1	1		negative	558	1	1	1	1	1	1	
streetnum	579	0.9983	0.9965	0.9974	0.9829	0.9931	0.988		prod_info_	557	1	1	1	1	1	1	
countable	556	1	1	1	0.9929	1	0.9964		edit_cart_c	555	0.97	1	0.98	0.94	0.99	0.96	
weekday	555	1	1	1	0.9804	0.9928	0.9866		checkout	555	1	1	1	0.97	0.99	0.98	
person	526	1	1	1	1	1	1		list_indexi	553	1	1	1	0.95	1	0.98	
zipcode	525	0.9962	1	0.9981	1	0.9962	0.9981		cart_total	550	1	1	1	1	0.97	0.98	
date	510	1	1	1	1	0.9961	0.998		order_mgn	549	1	1	1	0.97	0.99	0.98	
nutrient	431	0.9954	0.9977	0.9965	0.9863	0.9954	0.9908		prod_info_	549	1	1	1	1	1	1	
state	264	0.9925	1	0.9962	0.9884	0.9659	0.977		prod_info_	547	1	1	1	0.99	1	0.99	
pricespec	244	1	1	1	1	1	1		address_in	546	1	1	1	1	1	1	
occasion	154	1	1	1	0.9686	0.9935	0.9809		query_cart	546	1	1	1	0.92	1	0.96	
availability	134	1	1	1	1	0.9701	0.9848		edit_cart_e	546	1	1	1	0.96	0.96	0.96	
distance	132	0.9848	0.9848	0.9848	0.9848	0.9848	0.9848		return_ite	545	1	1	1	1	1	1	
restrictedf	34	1	1	1	1	1	1		nearest_st	545	0.98	1	0.99	0.96	1	0.98	
timeslotty	29	1	1	1	1	0.6897	0.8163		store_info_	543	1	0.98	0.99	0.95	0.98	0.96	
restriction	28	1	1	1	1	1	1		query_cart	542	1	1	1	1	0.9	0.94	
storeid	24	1	1	1	1	1	1		prod_info_	541	1	0.99	0.99	0.99	0.99	0.99	

# Converse Tools Demo

Integrated development, configuration, deployment, testing, and analytics through the **Converse tool**

**CX TOOLS**

STAGE 3 | PROD 0

Enter a test phrase Staging

ⓘ Use the input above to test how the newly trained model will parse customer utterances.

**Warning!**  
Converse does not currently support PCI data and work is in progress to make the platform PII compliant. DO NOT create experiences that request sensitive PII or PCI data from your users, including (but not limited to) name, email, phone number, credit card, etc.

**Intents** Showing 1 - 13 of 13 | 20 per page

Enter a new intent	CREATE INTENT
negative	PUBLISHED
agent_transfer	PUBLISHED
ask_csat	STAGED
temperature	PUBLISHED
product	PUBLISHED
welcome	PUBLISHED
order	STAGED
order_status	PUBLISHED
ladder_planning	PUBLISHED
add_to_cart	PUBLISHED
capability	PUBLISHED
sector_performance	PUBLISHED
quote	PUBLISHED

# Client Integrations for Shopping



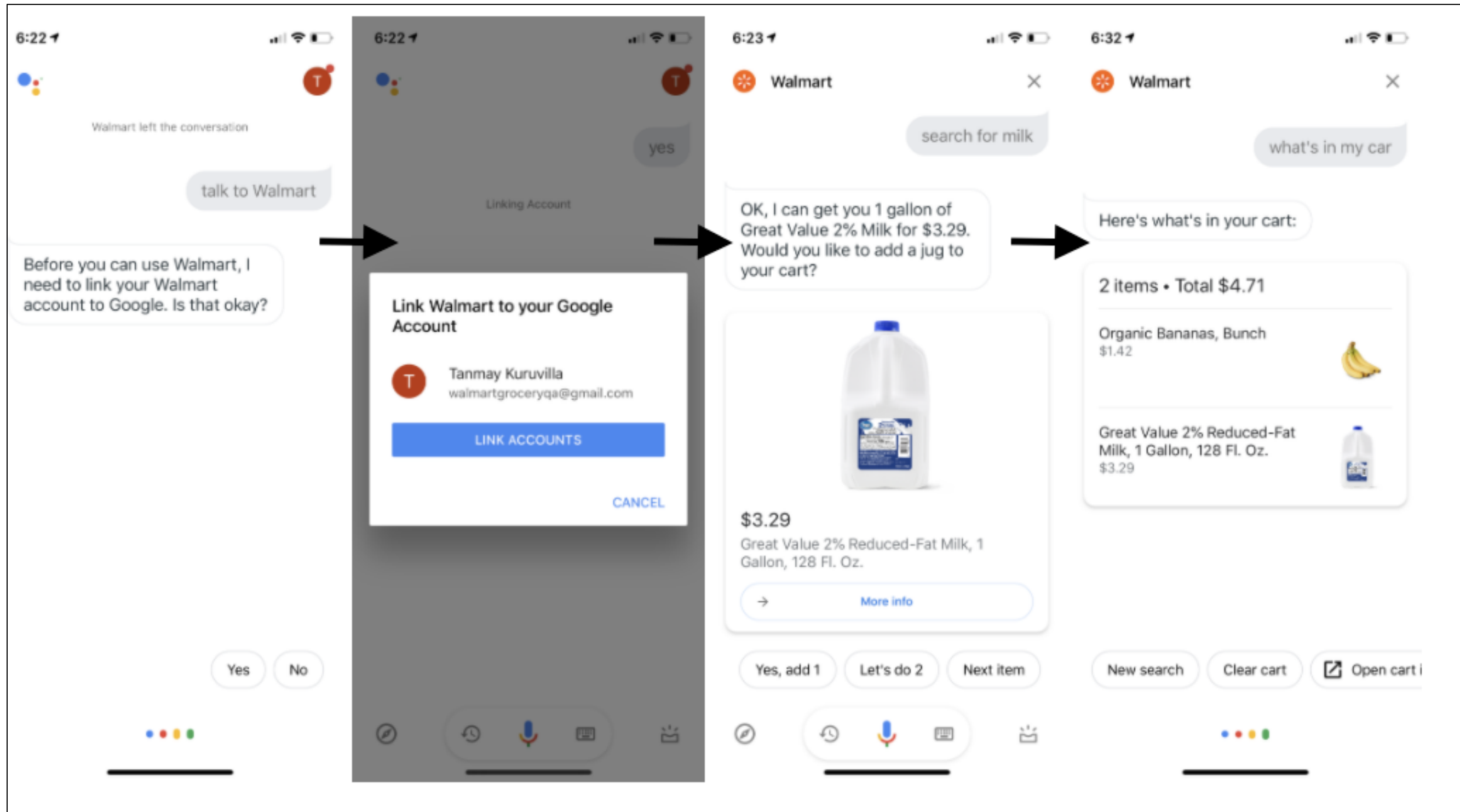
Google Assistant

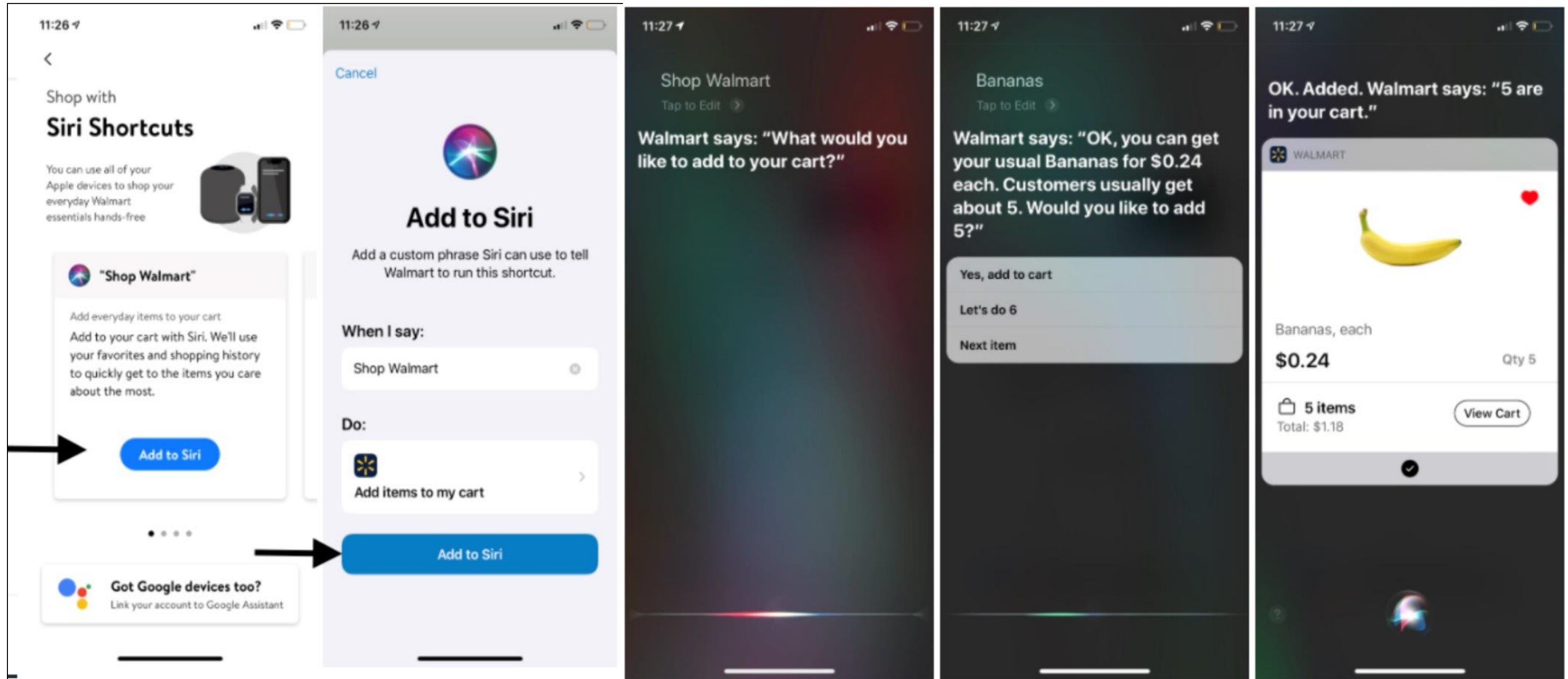


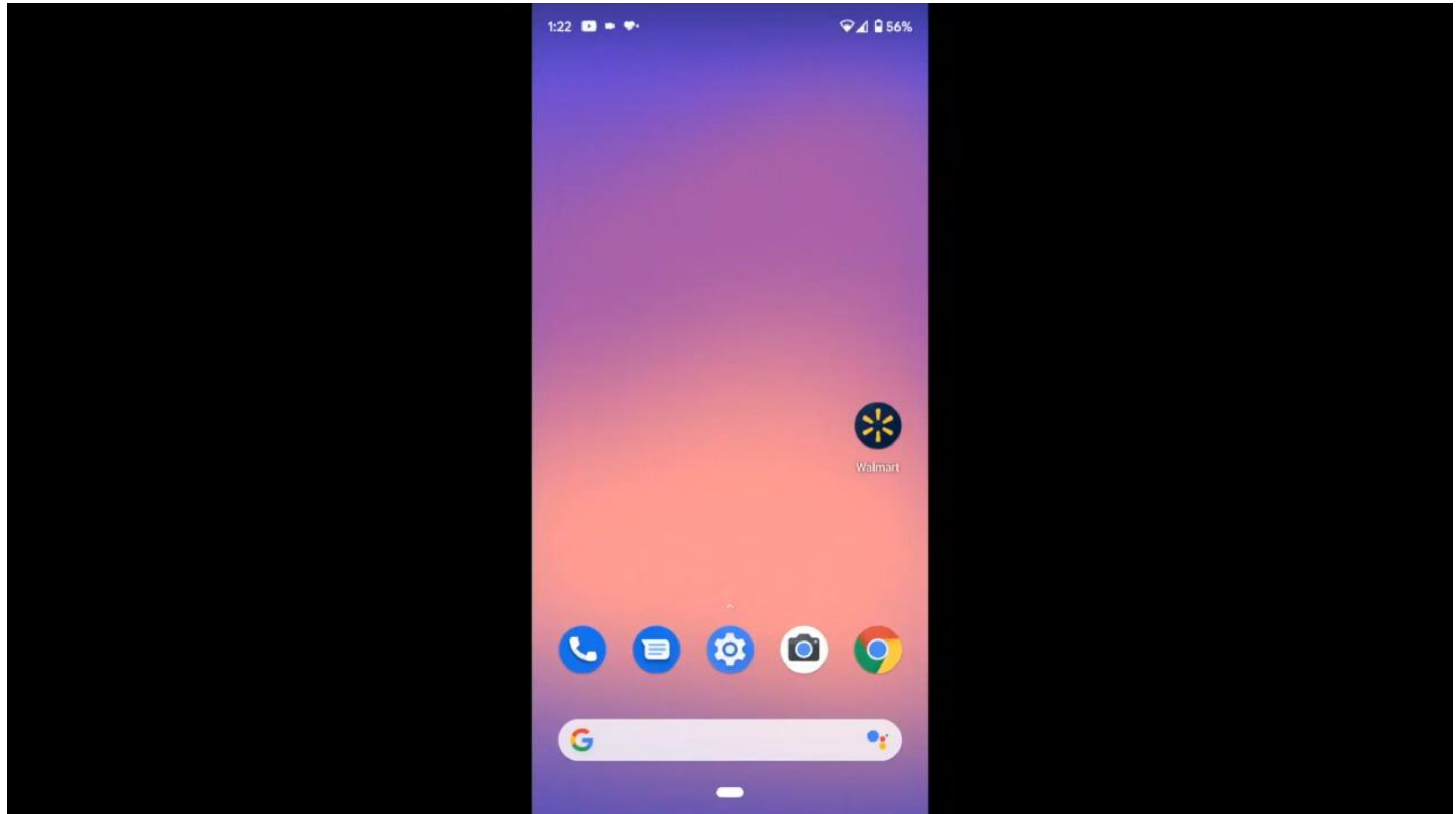
Siri



Google App Actions

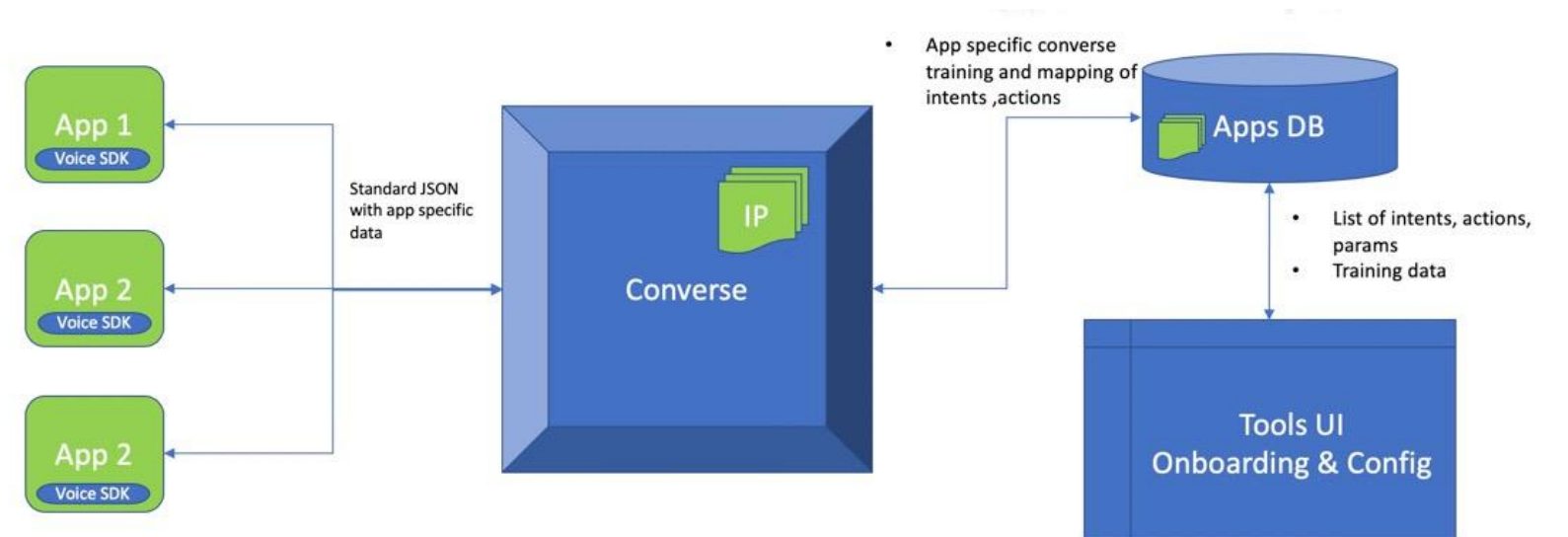


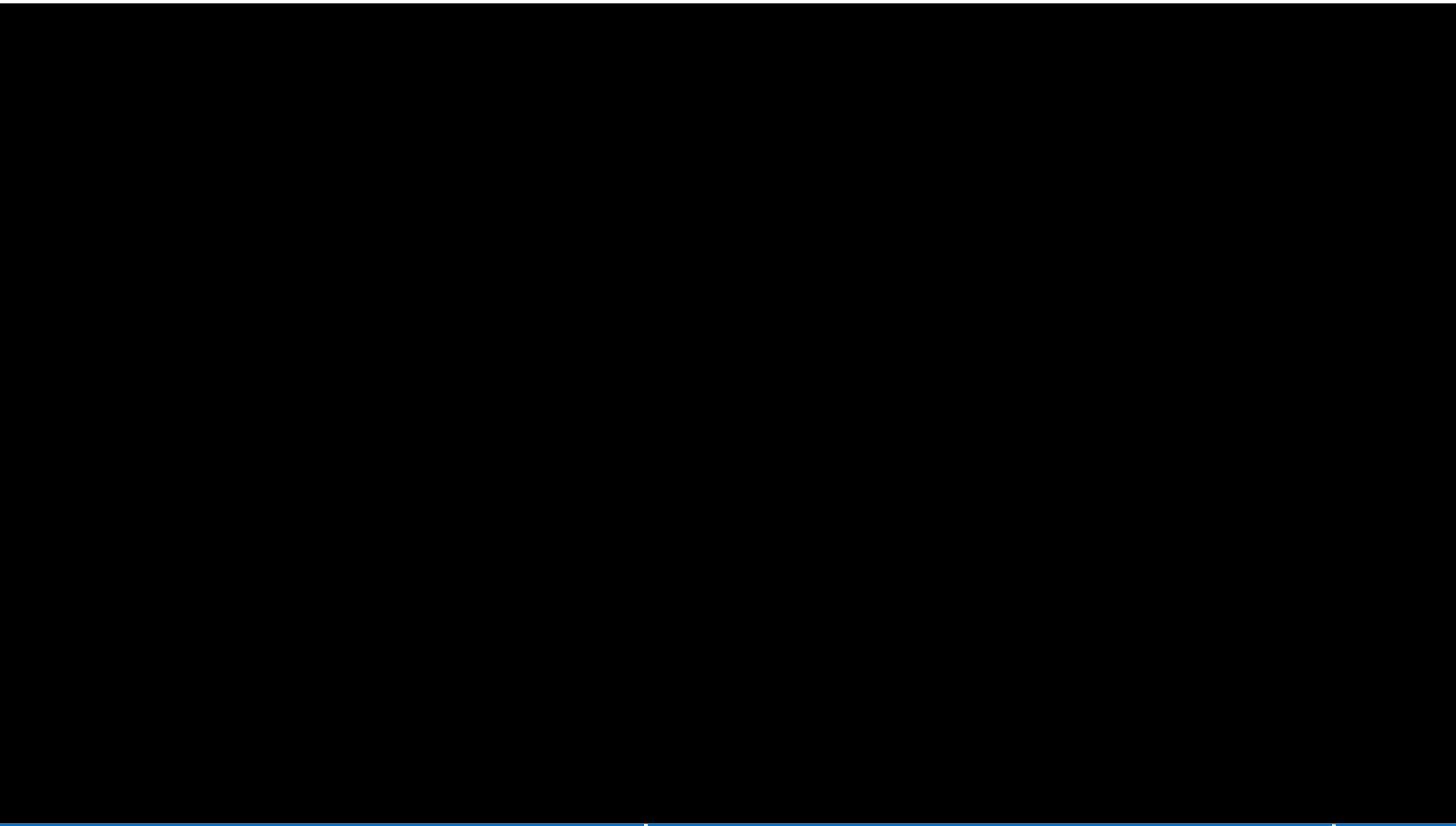






- STT ( Speech-To-Text) conversion for user utterance
- Communicate with Converse server and get the response from linked user.
- Provide TTS ( Text-To-Speech) for the converse response
- Provide default UI kit for showing Converse response in a presentable way.





*Contact us - #converse-with-us*

*For more information - <https://converse.walmart.com/>*