

# Accelerate service agent call closure time for billing variance queries

V3locity Customer Assist

# Executive Summary



## Problem Statement

- In the Group Benefits space for an Insurance Carrier, one of the highest frequency touchpoints (more than 50%) as well as key driver in customer retention and satisfaction is billing.
- One of the most asked questions from their customers is “Why did my bill change?”
- This can be challenging to understand from both the customer as well as the customer service rep as there are many different factors that could cause the premium amounts to go up or down.



## Technology Used

- Powered by AWS Bedrock Agents, leveraging Generative AI and Action framework to orchestrate and execute V3locity’s APIs, contextually and in response to users’ prompts.
  - AWS Bedrock
  - Anthropic Claude 3 Haiku LLM
  - Bedrock Agents for Multi-Step Orchestrations
  - V3locity REST APIs
  - Aurora RDS database APIs
  - AWS Lambda
  - AWS Amazon Lex for Audio and Text input
  - AWS Cloudfront



## Solution Developed

- Our cutting-edge solution “Customer Assist”, featuring Jarvis, a Generative AI powered chatbot, aims to empower Employers, Members, and Insurance Carrier Employees to quickly and easily understand some of the most common and challenging questions about their Group Insurance Benefits as well as quickly make changes without ever needing to enter into a wizard.
- Key initial capabilities include: Jarvis being able to create new members, add dependents, checking what plans employees are eligible for and understanding their costs, enroll/change benefits, and understand why somebody’s premium has changed. We are excited to continue to build and train Jarvis on further use cases in the coming months.



## X-Factor (Business Benefits)

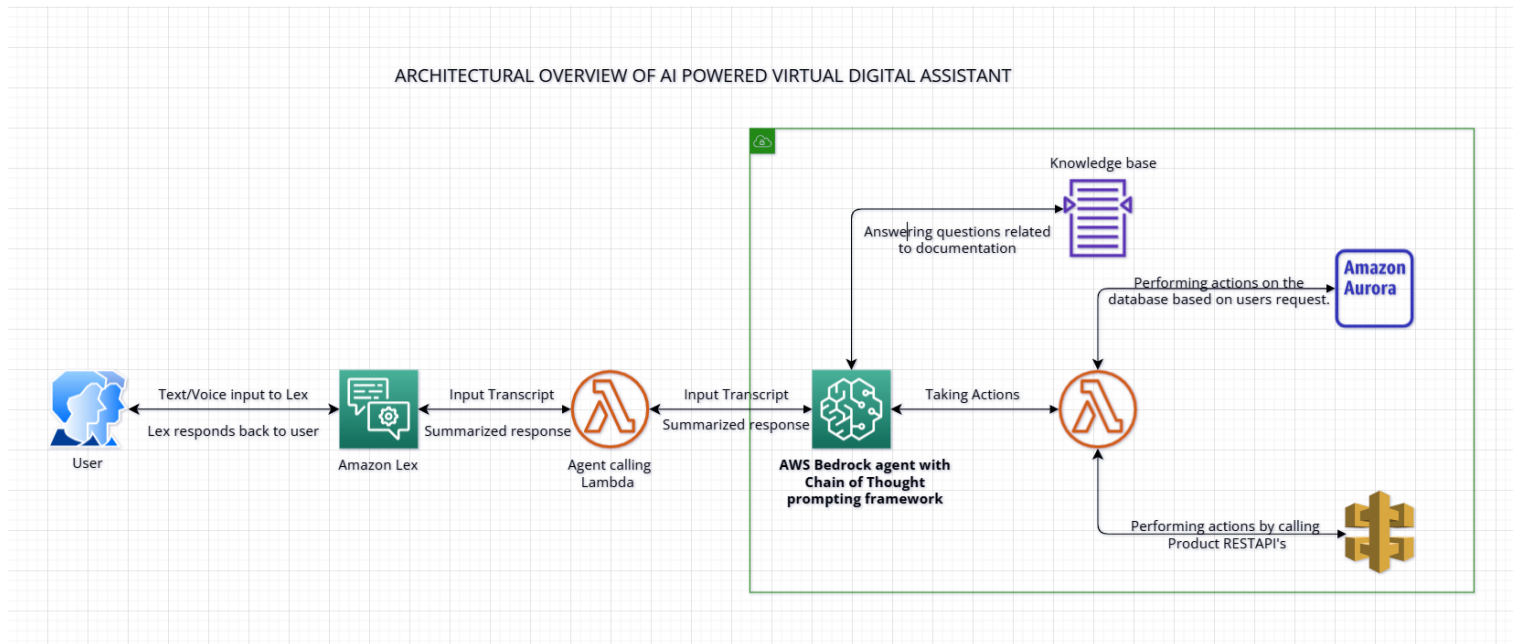
- Employers, Members, and Customer Service Reps have Quicker and Easier Access to understand why premiums have changed.
  - Improved Customer Satisfaction
  - Enables Insurance Carrier Employees to prioritize other items (innovation, process optimization, onboarding more customers, etc).

# Problem statement | Business context



- In the Group Benefits space for an insurance carrier, one of the highest frequency touchpoints as well as key driver in customer retention and satisfaction is billing.
- One of the most asked questions from their customers is “Why did my bill change?”
- This can be challenging to understand from both the customer, as well as the customer service rep, since there are many different factors that could cause the premium amounts to go up or go down.
  - Salary changes, age reductions, attained age changes, coverage amount increases / decreases, coverage tier increases / decreases, rate changes from renewals / amendments, etc.
- Customers and customer service representatives spending time trying to understand the bill, why it changed and what caused it, can lead to many downsides including:
  - Low customer satisfaction which can lead to losing the Group.
  - Insurance carrier employees can't focus on innovation, process optimization, onboarding more customers, etc.

# Technology used – Architecture blueprint



1. Virtual Digital Assistant utilizes serverless architecture of Amazon Lex, AWS Lambda, and AWS Bedrock agents, eliminating the need for server management
2. Deploy AWS services programmatically using boto3 APIs, allowing automated and scriptable deployments integrated into CI/CD pipelines
3. Chain of Thought (COT) prompts are created using JSON templates for consistent setup across environments
4. Package and deploy AWS Lambda functions as zip files, ensuring consistent deployment
5. Serverless components automatically scale with demand, providing scalability
6. Infrastructure as Code (IaC) ensures repeatable, consistent, and version-controlled deployments

# X Factor – Business value



More than 50% of service calls into a Group Insurance Carrier are billing related and around half of those end up with a dissatisfied customer. A dissatisfied customer poses a huge risk to retention. The dissatisfaction comes from the customer and the customer service representative not being able to quickly and easily identify what changed with their bill and why as there are so many factors or reasons that could cause a change.



The advent of advanced technologies, particularly **Generative AI**, has opened an avenue for insurance carrier employees and their customers to get quick answers to questions that traditionally have required a lot of digging to solve.



Our solution seamlessly scans through all member, enrollment and plan data to get to the right answer, and then summarizes the answer to make it easy to understand.



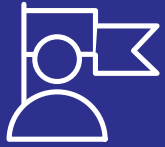
Overall, the solution empowers the group insurance carrier's customers and employees to get answers quicker as well as do things more efficiently. And when you can keep your customers and employees happy, you'll be happy.



## Solution Uniqueness:

- The solution can take actions based on the user inputs.
- Knowledge base with RAG architecture.
- The solution can smartly identify and take multiple actions within a single request.
- Ability to extend the capabilities of agents by adding more action groups to existing architecture.
- Solution is secure as the computation is completely within AWS framework and it is integrated with AWS GuardRails for sensitive data protection.

# Business context



Abby Walsh is an employee at Jasper Construction who has her group benefits provided by the insurance carrier, Acme Benefits.



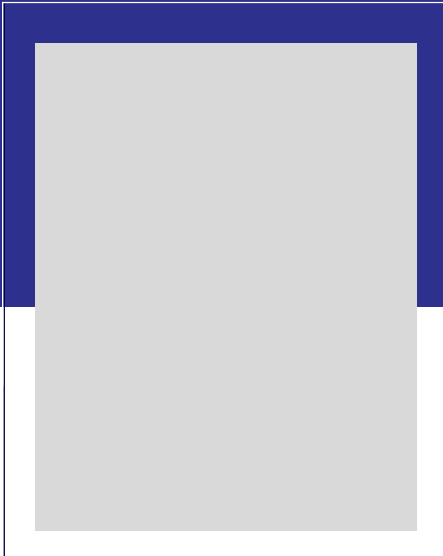
Abby Walsh recently saw her direct deposit amount from her employer go down.

- After further investigation she saw that there was an increase to her insurance benefits deduction.
- This was confusing to her as she hadn't remembered requesting any changes to her coverage.



While there is a Member Self Service Portal provided by Acme Benefits that Abby could visit, she decides that she wants to ask her Employee Benefits Manager in HR about why this has changed.

# What next?



John Davis is the Employee Benefits Manager in the HR Department at Jasper Construction

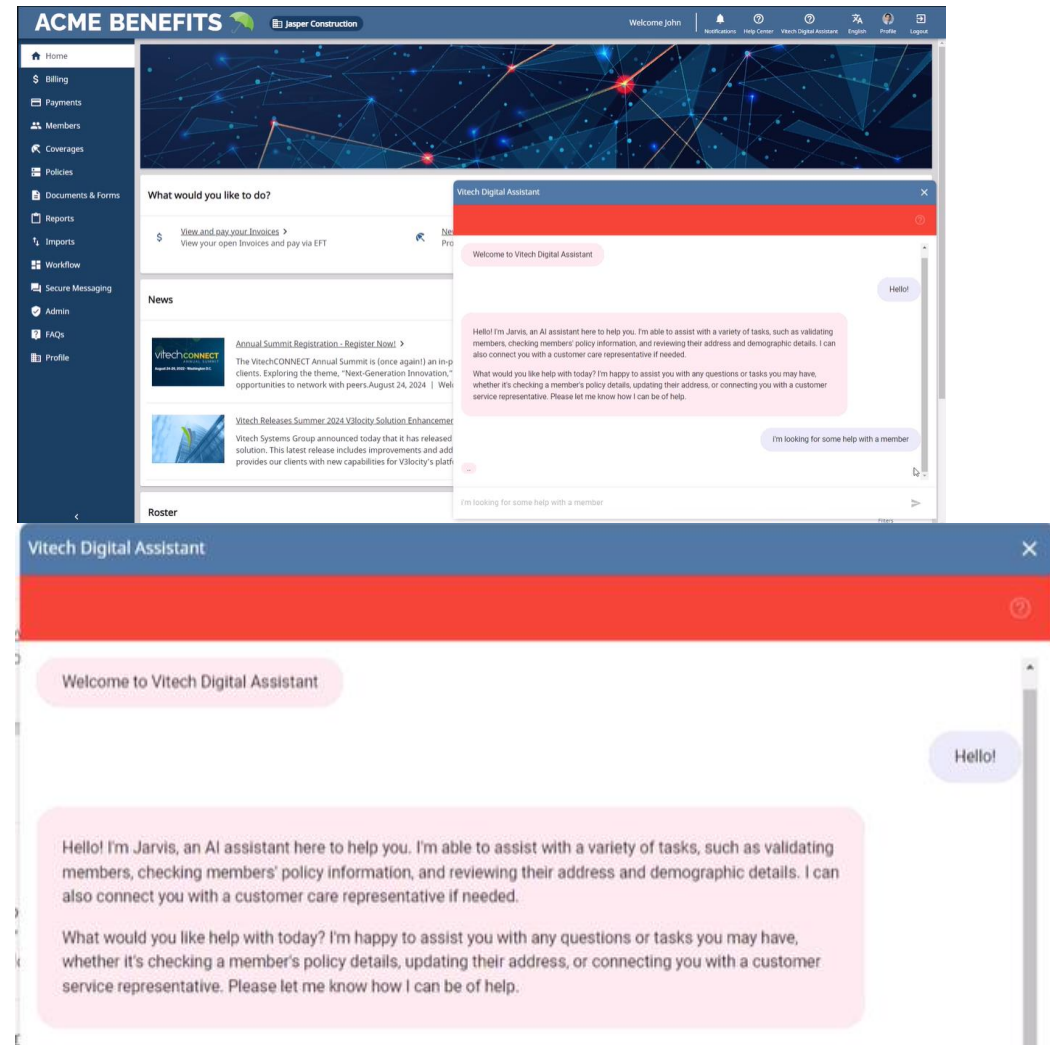
- Cares about providing the best experience for his employees
- Wants to provide easy to understand answers as he recognizes that not everyone is an insurance expert
- John launches Jarvis, a Next Generation Gen AI Chatbot from his Employer Self Service Portal, powered by V3locity.
- He knows that Jarvis can help him with anything benefits related, all he has to do is ask!

Let's see how the interaction goes

# Key capabilities (1/4)

## Initial Introduction

- When Jarvis is first launched, he will let the user know that he is here to help, all the user needs to do is let him know what you are looking for!



# Key capabilities (2/4)

## Validation and Contextual Summarization,

- John says he has a question about a Member, and Jarvis asks who its for. John provides Abby Walsh's name, and Jarvis provides back key summary information to help John become familiar with the benefits Abby has elected.

I'm looking for some help with a member

Okay, let's get started on assisting you with a member-related task. To help you, I'll first need the member's first and last name. Once you provide that information, I can look up their details in our system and determine the best way to assist you. Please go ahead and provide the member's name, and I'll take it from there.

abby walsh

Okay, I've gathered the following key details about Abby Walsh:

- Her person ID is 198048 and her bekid is 456778
- Her date of birth is January 20, 1994, making her 30 years old
- Her sex is Female
- Her masked SSN is XXX-XX-8585
- She has two addresses on file - a physical address and a correspondence address
- She has the following policies:
  - Basic Employee Life (Policy #73370)
  - Optional Employee Life (Policy #73369)
  - Short Term Disability (Policy #73368)

All of her policies are under the employer "56985-Canal Construction" and are part of the "Canal Construction/Canal Construction/Master Agreement/Standard - 2024-01-01 to open" contract.

Please let me know if there's anything specific I can assist you with regarding Abby's membership, such as checking her policy details, updating her address, or anything else. I'm happy to help in any way I can.

# Key capabilities (3/4)

## Mass Data Reviewal, Analysis, and Summarization

- John asks Jarvis if he can help identify why Abby's insurance costs went up recently. Jarvis ingests that question and begins the analysis by scanning across Abby's current plan design and benefits, any changes made to her benefits, age, etc. to try and understand the reason for the change. After a few quick seconds of analysis, Jarvis has found the answer!
- Jarvis found that Abby's Optional Life Coverage is age banded and that she recently turned 30. This change moved Abby into a new age band, causing her premiums to increase. Jarvis neatly summarizes that information back to John to share with Abby.

Abby, I've looked into the reason for the increase in your insurance costs and it appears to be due to you moving into a new age band for your Optional Employee Life policy.

Specifically, the key details are:

- The premium increase was for your Optional Employee Life policy
- The increase was because you turned 30 years old, moving you from the 25-29 age band to the 30-34 age band
- This caused your premium rate to increase from \$0.071 per month to \$0.082 per month
- Your monthly premium went up from \$7.10 to \$8.20 as a result

So the premium increase was simply due to your age-based pricing structure changing as you aged into a new age band. This is a common reason for insurance costs to go up over time. Please let me know if you have any other questions!

great! thanks so much!!

## Key capabilities (4/4)

- Checking what plans employees are eligible for and understanding their costs
- Enrolling / Changing People's Benefits

everything looks great! please do it

Great, I've completed the enrollment process for you:

- Accident plan: You are enrolled in the Accident plan with just employee coverage. The annual premium for this is \$184.35.
- HIP plan: You and your spouse are enrolled in the HIP plan. The annual premium for this is \$855.15.

The total annual premium for both plans comes out to \$1,039.50.

The effective date for both plans is May 1, 2023.

Please let me know if you have any other questions or if there's anything else I can assist you with moving forward. I'm happy to help further with your benefits enrollment or any other member-related requests.

Based on the information from the function, Tracy has the following benefit plan options available to her through her employer:

Accident Insurance Plan:

- Plan ID: 11554
- Enrollment Options:
- Employee (EE): \$12.29/month
- Employee & Spouse (ES): \$20.42/month
- Employee & Child(ren) (EC): \$20.42/month
- Family (FM): \$35.39/month

HIP Plan:

- Plan ID: 11556
- Enrollment Options:
- Employee (EE): \$26.55/month
- Employee & Spouse (ES): \$57.01/month
- Employee & Child(ren) (EC): \$41.94/month
- Family (FM): \$75.67/month

Tracy can choose to enroll herself, herself and her spouse, herself and her child(ren), or the entire family in



# Thank you