



# Powering Transformation:

How AWS and Pega Enable Businesses to Extract Real Value by Deploying Generative AI Responsibly

# Agenda



Innovate with Generative AI



Responsible AI



AWS Generative AI Stack



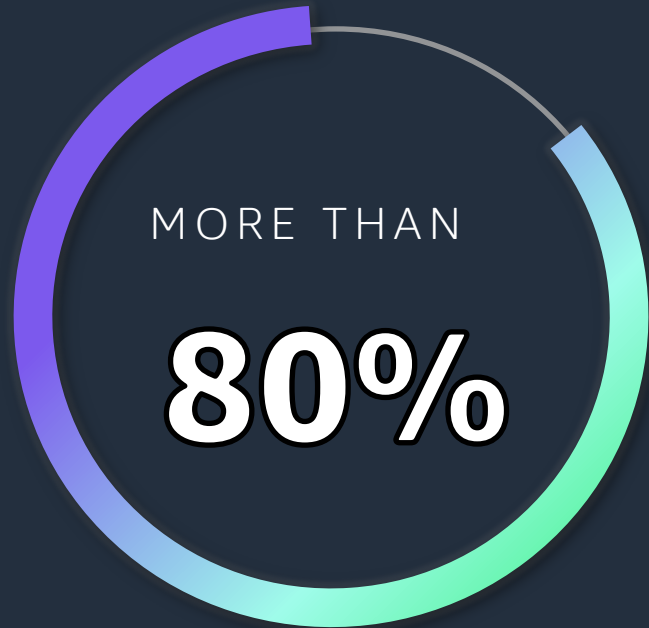
AWS and Pega Co-Innovation

# Innovate with Generative AI





# Generative AI Apps Have Captured Public's Imagination



ACCORDING TO GARTNER, INC.®

of enterprises will have used generative AI APIs or deployed generative AI-enabled apps by 2026

Gartner, "More than 80% of Enterprises," October 11, 2023.



ACCORDING TO GARTNER, INC.®

Generative AI-supported work tends to be more efficient and of higher quality than work produced by unsupported human workers

Gartner, Four GenAI Use Cases for the Digital Workplace, October 10, 2023.

# Your Data Is The **Differentiator**



Generic  
generative AI

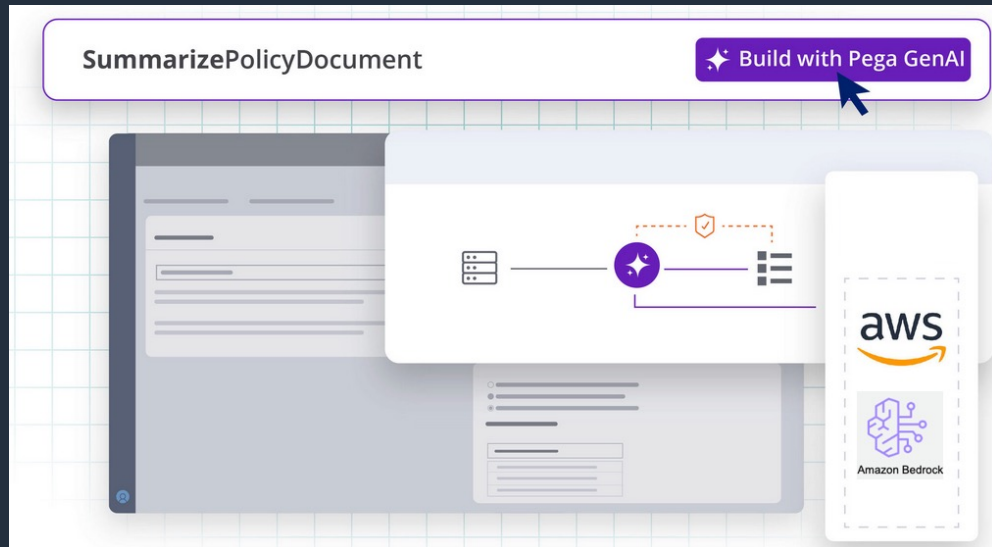


Generative AI that  
knows your business  
and your customers

# Move Quickly And Generate Value

- **Your data is the key** to maximizing the potential of generative AI
- **Identify use cases** that are relevant, viable, and impactful
- Empower your entire workforce, **regardless of their AI expertise**

# Amazon Bedrock Integration In Pega Genai™

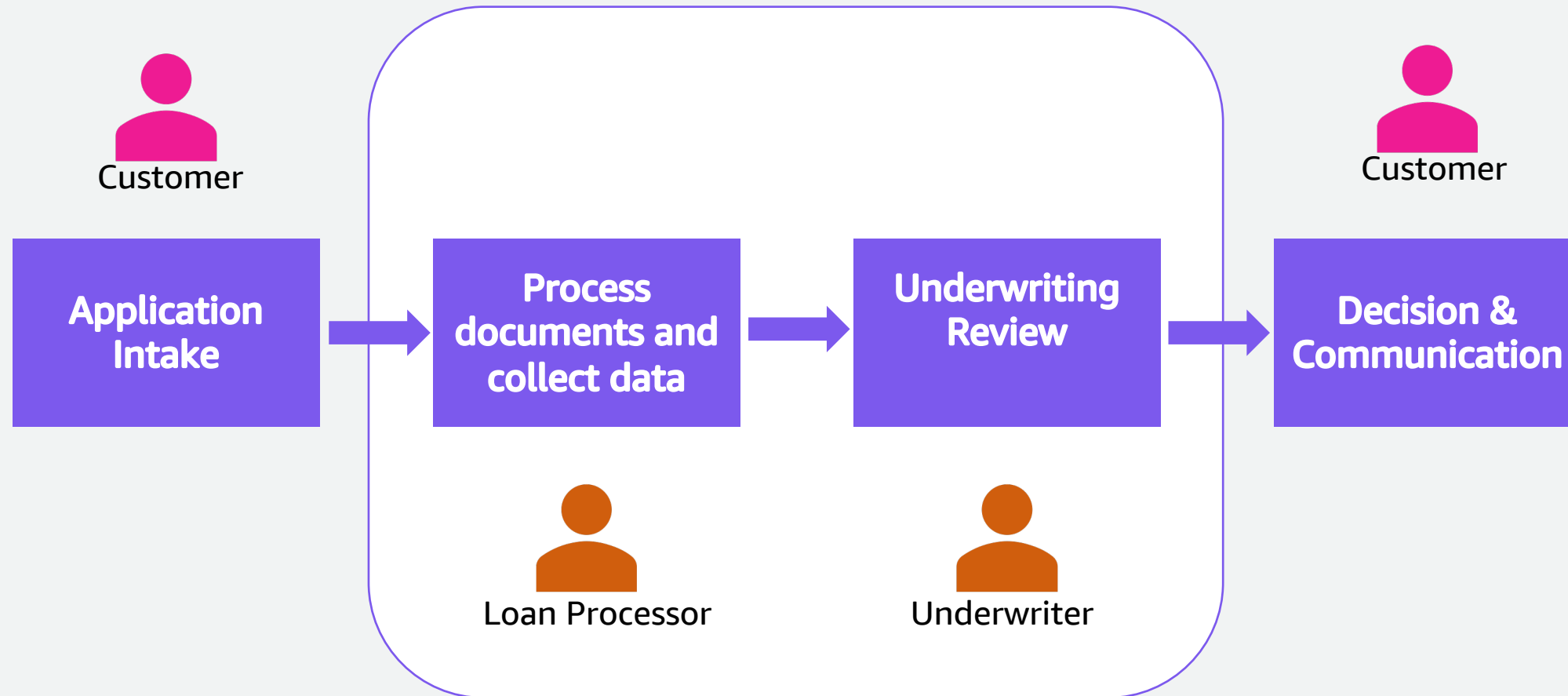


## Empower Innovation

- Available in Pega GenAI™ abstraction layer, known as Connect Generative AI
- Plug and play architecture for connecting with industry leading models available within Amazon Bedrock
- Infuse workflows with generative AI with enterprise grade flexibility, governance, and security



# Mortgage Underwriting Lifecycle

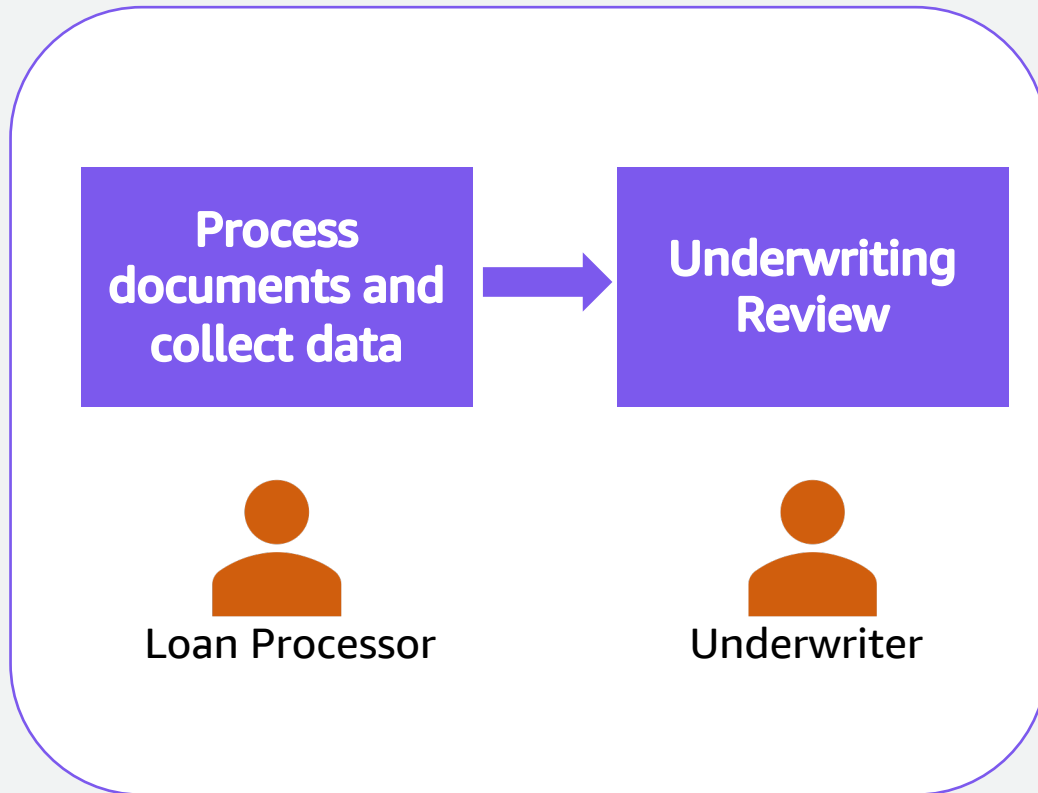


# Challenges

- Incomplete Loan Packages
- Missing Data
- Discovery of additional documentation requirements
- Stare and Compare work

Resulting in fewer loans processed and added costs for lender

# What Can We Do To Turbocharge Loan Processing?

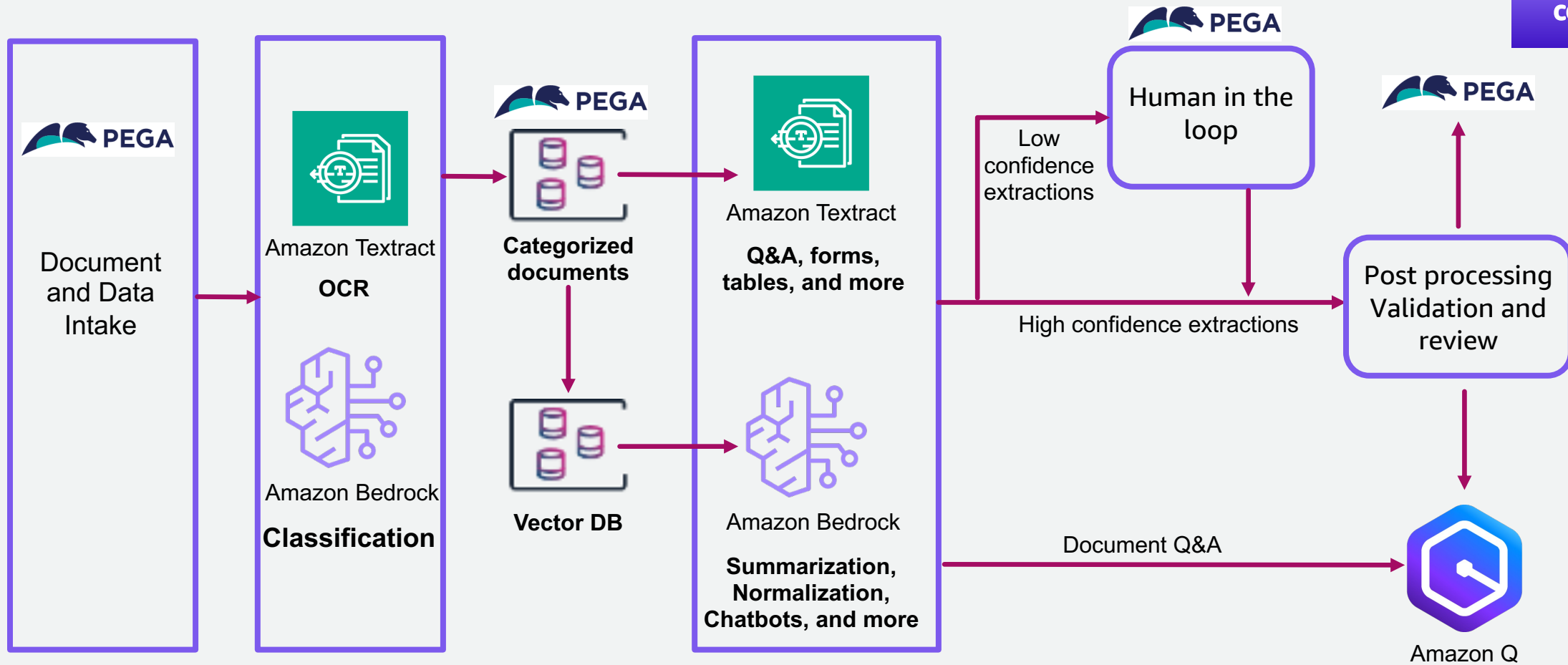


## Possible enhancements

- Automate Data Collection
- Reduce stare and compare work
- Empower Underwriter and Loan Processor by providing productivity tools
- .... more?

# Enhanced Intelligent Document Processing

Process documents and collect data



Ingestion

Classification

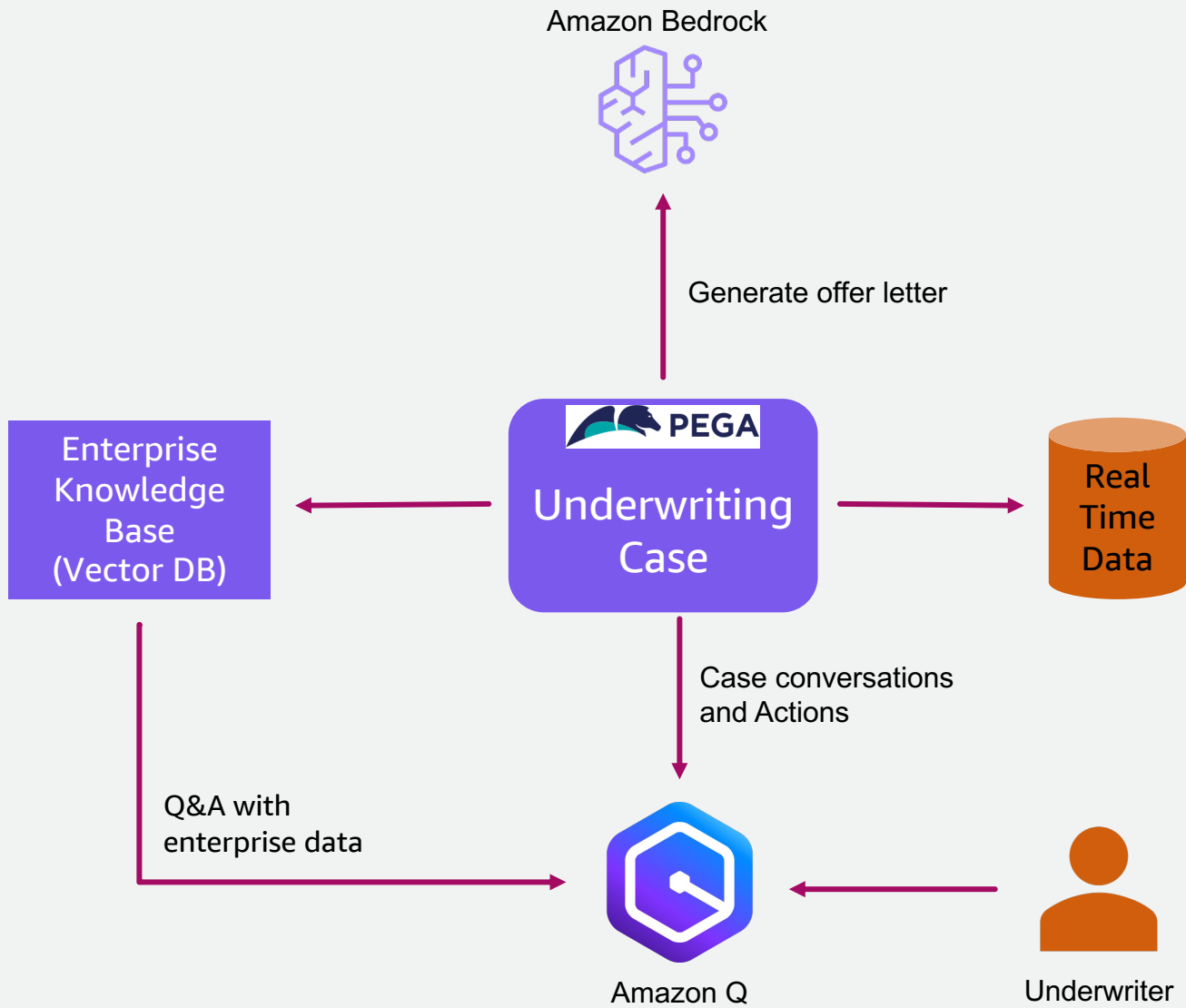
Derive Key Insights with extraction and enrichment

Verification & Human Review



UI, Business Rules, Integration, and Process pipeline orchestration on Pega





### XYZ Bank Underwriting

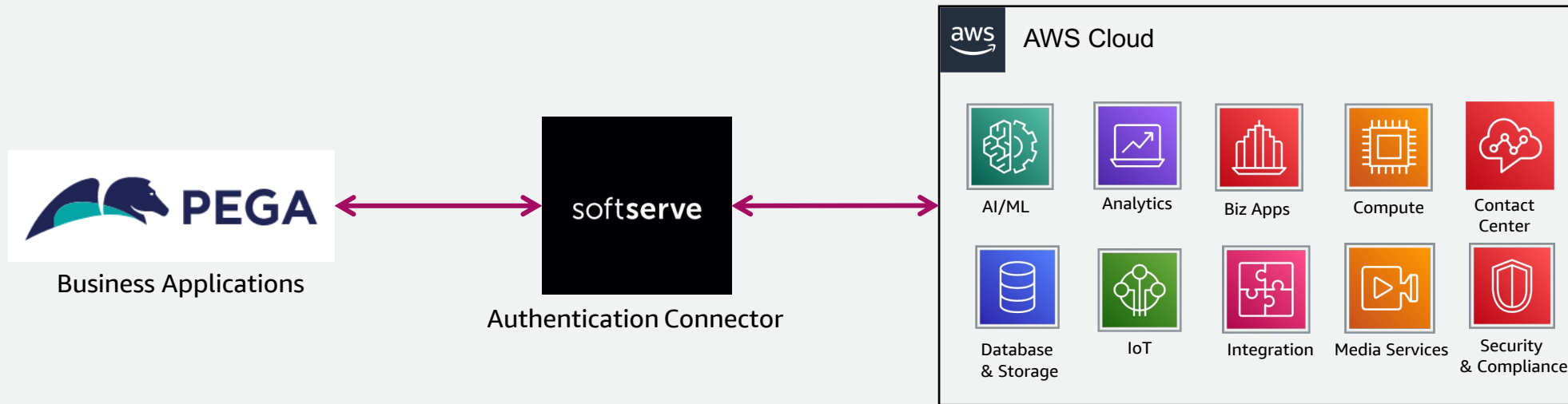
can you please summarize underwriting case MU-12345?

Here is a summary of underwriting case MU-12345: Borrowers: John and Jane Doe Property: Single family residence in Anytown, USA with a purchase price of \$350,000 and appraised value of \$355,000 Loan Details: Conventional 30-year fixed loan for \$315,000 (90% LTV) at 4.25% interest rate, estimated monthly payment of \$1,552, debt-to-income ratio of 28/42 Income and Assets: John's income of \$95,000 and Jane's income of \$52,000 for a total qualifying income of \$147,000. Liquid assets of \$65,000 and retirement accounts of \$120,000. Credit and Liabilities: Satisfactory credit profiles for both borrowers. Installment debts of auto loan (\$250/month) and student loan (\$150/month). Revolving credit card debt of \$200/month. No recent delinquencies or collections.<sup>[1]</sup> [Show source details >](#)

talk about some underwriting considerations for case MU-12345.

Based on the information provided in the search results, the key underwriting considerations for mortgage underwriting case MU-12345 are: - The borrowers (John and Jane Doe) meet the income, credit, and asset requirements for the conventional loan program they are applying for. - Their debt-to-income ratios of 28/42 are within the guidelines for the loan program. - They have adequate reserves and funds for the down payment. - There are no major credit or documentation issues noted.<sup>[1]</sup> [Show source details >](#)

# SoftServe Master Key Accelerator



- Unlocks integration with more than 200 AWS services on Pega
- Removes undifferentiated heavy-lifting with authenticating requests to AWS
- Security by design – verify identity, protect data in transit, protection against potential replay attacks

**Visit the SoftServe and AWS booths at Innovation Hub to see a demo!**

# Responsible AI Dimensions

## **FAIRNESS**

Considering impacts on different groups of stakeholders

## **EXPLAINABILITY**

Understanding and evaluating system outputs

## **CONTROLLABILITY**

Having mechanisms to monitor and steer AI system behavior

## **SAFETY**

Preventing harmful system output and misuse

## **PRIVACY & SECURITY**

Appropriately obtaining, using and protecting data and models

## **GOVERNANCE**

Incorporating best practices into the AI supply chain, including providers and deployers

## **TRANSPARENCY**

Enabling stakeholders to make informed choices about their engagement with an AI system

## **VERACITY & ROBUSTNESS**

Achieving correct system outputs, even with unexpected or adversarial inputs

# AWS Generative AI Stack





# Generative AI Stack

## APPLICATIONS THAT LEVERAGE LLMs AND OTHER FMs



Amazon Q  
Business



Amazon Q  
Developer



Amazon Q in  
QuickSight



Amazon Q in  
Connect

## TOOLS TO BUILD WITH LLMs AND OTHER FMs



Amazon Bedrock

Guardrails | Agents | Customization Capabilities

## INFRASTRUCTURE FOR FM TRAINING AND INFERENCE



GPUs



Trainium



Inferentia



SageMaker



UltraClusters



EFA



EC2 Capacity Blocks



Nitro



Neuron

# Amazon Bedrock

The easiest way to build and scale generative AI applications with foundation models (FMs)

Choice of leading FMs through a single API

Model customization

Retrieval Augmented Generation (RAG)

Agents that execute multistep tasks

Security, privacy, and safety

# Amazon Bedrock Supports Leading Foundation Models

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**AI21labs**

**Jurassic-2**

Contextual answers,  
summarization, paraphrasing

**ANTHROPIC**

**Claude 3, Claude 2.1 &  
Claude Instant**

Summarization, complex  
reasoning, writing, coding

 **cohere**

**Command & Embed**

Text generation, search,  
classification

 **Meta**

**Llama 3**

Dialogue use cases and  
language tasks

**Mistral AI**

**Mistral 7B, Mixtral 8x7B**

Text summarization, Q&A,  
Text classification, Text  
completion, code generation

**stability.ai**

**Stable Diffusion XL 1.0**

High-quality images and art



**Amazon Titan**

Summarization, image and  
text generation and search,  
Q&A

# Amazon Bedrock

Helps keep your data  
secure and private



None of the customer's data is used to train the underlying model

All data is encrypted in transit and at rest; data used for customization is securely transferred through customer's VPC

Data remains in the Region where the API is processed

Support for GDPR, SOC, ISO, CSA compliance, and HIPAA eligibility

# Guardrails for Amazon Bedrock

Implement safeguards customized to your application requirements and responsible AI policies

Apply guardrails to multiple foundation models and Agents for Amazon Bedrock

Configure harmful content filtering based on your responsible AI policies

Define and disallow denied topics with short natural language descriptions

Redact or block sensitive information such as PII, and custom Regex.

## **Challenges** with using existing generative AI assistants at work

→ **Lack of context**

→ **Security**

→ **Data privacy**

→ **Compliance**



# Amazon Q

Reinvent work with AWS' generative AI-powered assistant

Generally Available

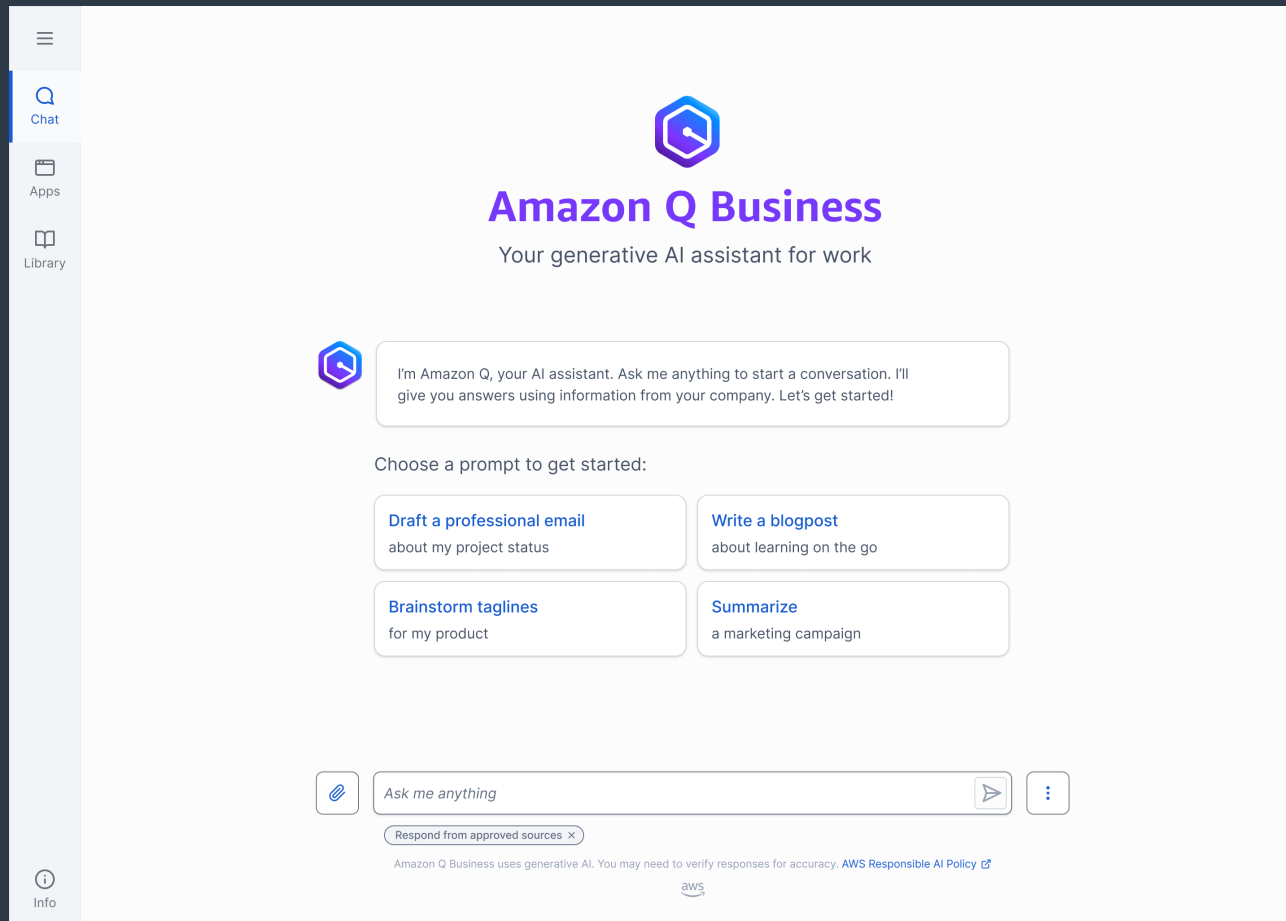
Knowledgeable of **your** company, code and systems

Available **wherever your work**

Attains **superior** generative AI performance on tasks

# Amazon Q Business Overview

BOOST YOUR WORKFORCE PRODUCTIVITY WITH GENERATIVE AI



Delivers quick, accurate, and relevant answers to your business questions, securely, and privately

Execute actions using out-of-the-box or custom plugins

NEW

Respects existing access control based on user permissions

Connects to over 40 popular enterprise applications and document repositories

Enables administrators to easily apply guardrails to customize and control responses

Streamlines daily tasks with user-created lightweight applications

NEW



# AWS and Pega: Co-Innovation



# Pega And AWS Bring The Most Impactful Business Applications To Life In The Cloud.

Together, we deliver the low-code platform delivering AI powered customer engagement and workflow automation across our client's cloud transformation journey. Pega Cloud is delivered as SaaS, powered by AWS, and available through the AWS Marketplace.



# AI/ML Joint Solutions



Generative AI with Amazon Bedrock



SoftServe Master Key Accelerator



Enhanced Intelligent Document Processing



Machine Learning with Amazon SageMaker



Pega voice AI integration with Amazon Transcribe

....and more

# Contacts

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# Resources



Gen AI on AWS



AWS Pega Partnership



Responsible AI with AWS

**Visit the AWS booth#28 for demo of our joint solutions with Pega!**





# Thank you!