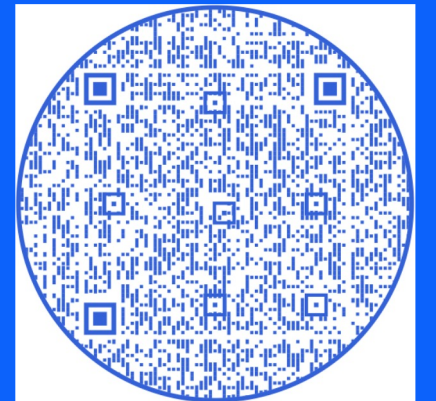


AWS & Slalom

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AI/ML Enablement- May 17, 2023



MAY 2023

Slalom Data + AI Overview

OUR PURPOSE

Building Better Tomorrows for all with Data + AI



Data + AI powers modern organizations

Data serves as the foundation of all decisions and processes—and is the source of sustainable competitive advantage.



Solutions for tomorrow start with Data + AI

The more we use data to understand the world around us, the faster we can adapt and the better we can anticipate future disruptions and opportunities.



Data + AI accelerates progress

Data enables organizations to make better decisions, faster, and run more efficiently. This creates new opportunities for people to think creatively and innovate boldly.

Our Capabilities

Visionary companies want to build a modern culture of data. **We can help them get there.**



Strategy

Create a vision and roadmap to fully capitalize on your data and embed it in how you work.

- Strategy & Roadmap
- Data Governance
- Master Data Management
- Analytics-Driven Advisory
- Privacy, Ethics, & Compliance



Architecture

Deploy cloud-native technologies, making data available to everyone in your organization.

- Modern Data Architecture
- Data Modeling
- Data Engineering
- Cloud Optimization & DevOps
- Scalability & Performance



Intelligence

Build AI solutions to help you see, understand, and act on the factors shaping your business.

- Model Design
- Machine Learning at Scale
- Intelligent Products
- MLOps
- Governed ML



Storytelling

Empower employees to think critically, uncover insights, and communicate effectively with data.

- Visual & Analytical Narratives
- Data Literacy & Analytics COE
- Dashboard Design & Development
- Governed Self-Service (Navigator)
- Data Discovery & Exploration



We have the people and expertise to deliver

1,750+

Data + AI consultants

1,200+

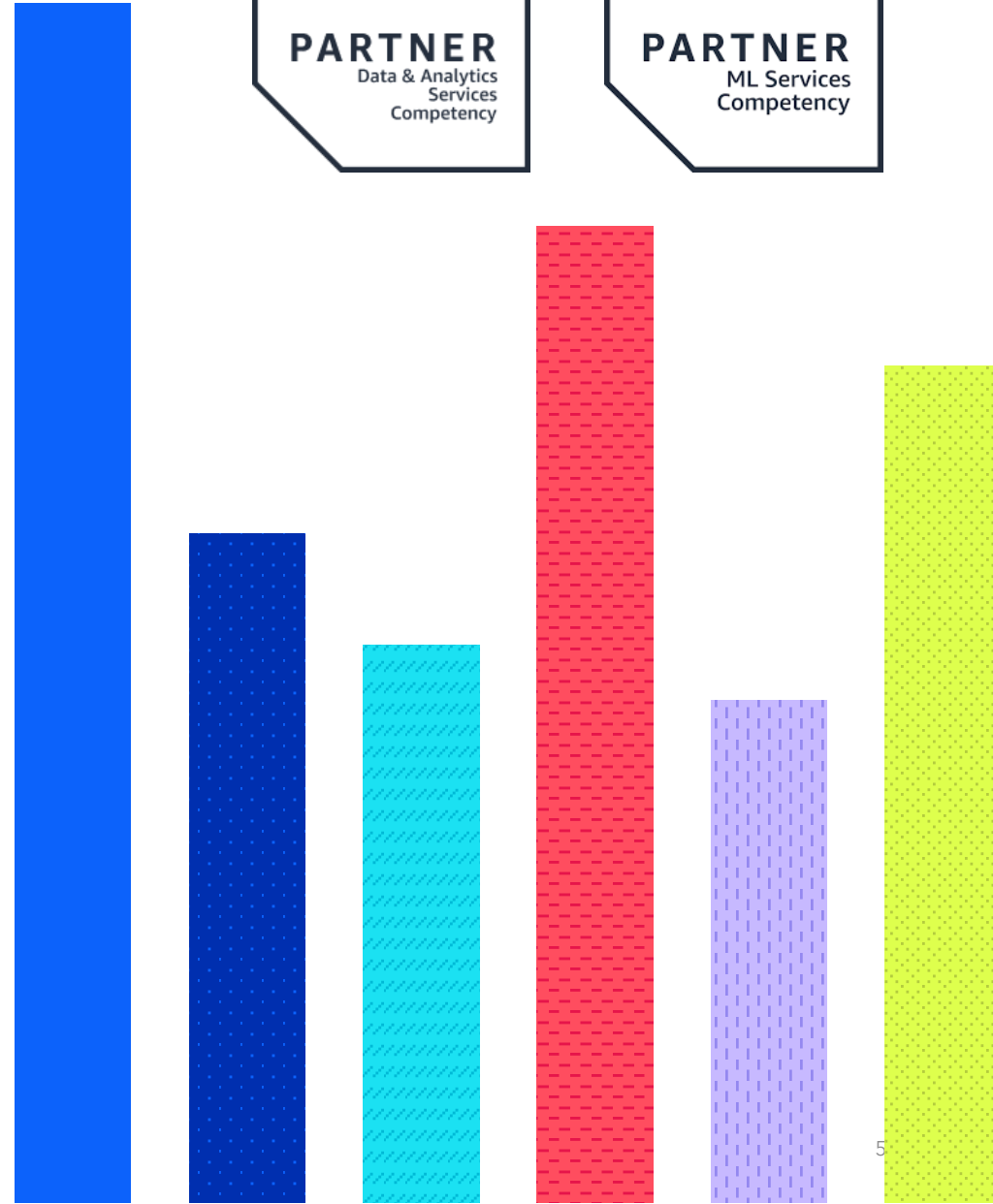
Customers in 9 industries

1,840+

Data + AI technology certifications

400+

AWS Certified Data + ML Specializations



Get Started on Your Generative AI Journey

AWS suite of services, including Amazon Bedrock & Titan

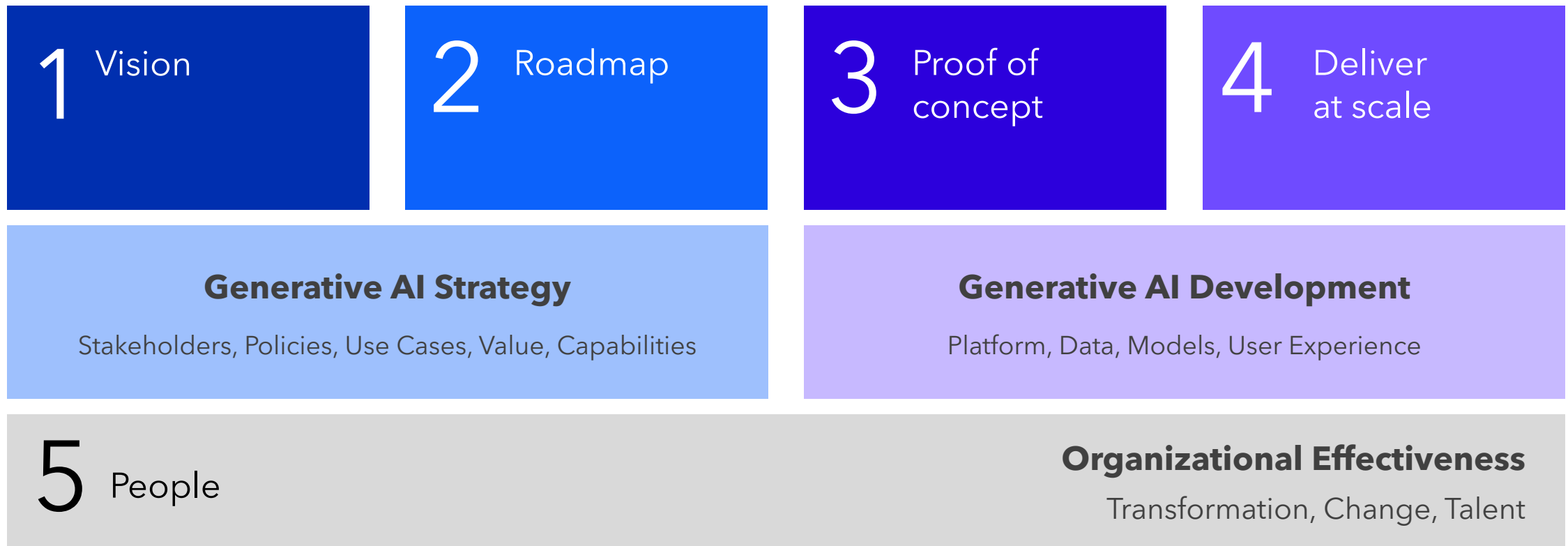
We start with a foundational grounding on what is Amazon Bedrock & Titan, the benefits of building generative AI with AWS, the emerging use cases we are beginning to see across industries, and what to start thinking about from a responsible AI perspective.

Through this collaborative workshop-based approach, we will partner with you to define and prioritize a few potential business use cases that could leverage this new capability; and build a plan to go pilot and eventually realize the full benefit.



Generative AI Journey

A pragmatic approach to move from ideation to business impact (can be parallelized)

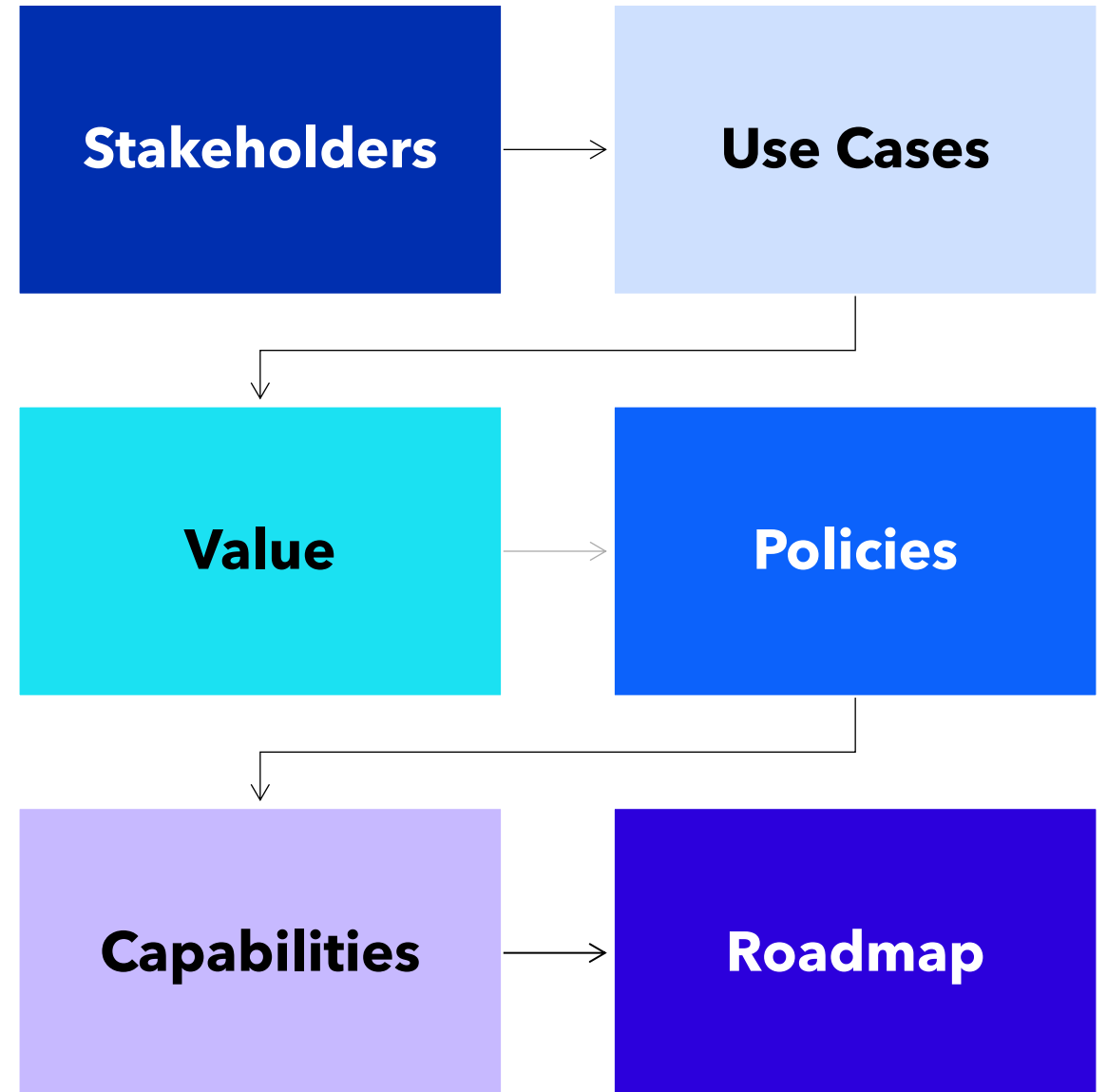


Generative AI Strategy

Set the direction for the organization

Leaders begin to sense the opportunity and demand across the organization.

- Understand the potential
- Engage stakeholders
- Identify high value areas
- Establish policies to mitigate risk
- Define required capabilities
- Sequence effort over time



Don't Forget Common NLP Tasks



Text classification/regression

Predict Customer Satisfaction
Categorize incoming messages from social media, email, and chat
Group content, products, or customers to make better interactions with your products or services



Text token classification

Extract entities from medical, legal documents, or contracts
Named entity extraction, such as Name, Locations, or dates
Extracting domain-specific elements from documents, such as skills in resumes



Text span prediction (question & answers)

Finding relevant information from medical, legal documents, or contracts
Build a company-specific question-answering system, such as a FAQ or help pages.
Route customer service calls to the right agent or service



Text sequence to sequence (summarization)

Simplify domain-specific documents.
Summarize the text for a better understanding and clarity.



Text metric learning

Detect fake reviews which are similar to each other
Find similar questions in a user forum to remove duplicates
Group similar customers based on product descriptions of purchases.

Generative AI Example

Write Copy for Outbound

Prompt

Act as a sales representative for [COMPANY] and write an email to a healthcare provider about a new cardiovascular therapy for Carotid Stent Systems. The healthcare provider is a cardiologist who lives in Denver, CO and works at Denver Health. Talk about the benefits of this new therapy. Mention the range of cardiovascular therapies including coronary intervention, cardiac rhythm management, and peripheral intervention. Ask to schedule a meeting and propose several specific times next week.

Response

Subject: Introducing a Revolutionary New Cardiovascular Therapy - Carotid Stent Systems

Dear [Healthcare Provider Name],

I hope this email finds you well. I am writing to you today as a pharmaceutical sales representative for Abbott Labs, and I am thrilled to introduce you to our latest innovation in cardiovascular therapy - the Carotid Stent Systems.

As a cardiologist at Denver Health, I am sure you are well aware of the importance of providing the best possible care for your patients. That's why I wanted to share this new therapy with you, which I believe has the potential to make a real difference in the lives of your patients.

The Carotid Stent Systems are designed to provide a minimally invasive solution for the treatment of carotid artery disease, and offer a range of benefits over traditional surgical methods. These benefits include: faster recovery times, lower risk of complications, improved patient outcomes.

At [COMPANY] we are committed to providing healthcare providers with a range of cardiovascular therapies, including coronary intervention, cardiac rhythm management, and peripheral intervention. We believe that the Carotid Stent Systems will be a valuable addition to our portfolio, and we are eager to help you learn more about this innovative therapy.

I would like to take this opportunity to schedule a meeting with you to discuss the Carotid Stent Systems in more detail. I am available next week on Monday, May 8th at 2 PM, Wednesday, May 10th at 10 AM, or Friday, May 12th at 3 PM. Please let me know if any of these times work for you. I look forward to the opportunity to discuss this exciting new therapy with you in more detail. Thank you for your time and consideration.

Generative AI Example

Write Copy for Outbound

Prompt

Act as a sales representative for [COMPANY] and write an email to a healthcare provider about a new cardiovascular therapy for Carotid Stent Systems. The healthcare provider is a cardiologist who lives in Denver, CO and works at Denver Health. Talk about the benefits of this new therapy. Mention the the range of cardiovascular therapies including coronary intervention, cardiac rhythm management, and peripheral intervention. Ask to schedule a meeting and propose several specific times next week. Also, offer a \$100 Starbucks gift card for any new patients.

Response

Subject: Introducing a Revolutionary New Cardiovascular Therapy - Carotid Stent Systems

Dear [Healthcare Provider Name],

I hope this email finds you well. I am writing to you today as a pharmaceutical sales representative for Abbott Labs, and I am thrilled to introduce you to our latest innovation in cardiovascular therapy - the Carotid Stent Systems.

As a cardiologist at Denver Health, I am sure you are well aware of the importance of providing the best possible care for your patients. That's why I wanted to share this new therapy with you, which I believe has the potential to make a real difference in the lives of your patients.

The Carotid Stent Systems are designed to provide a minimally invasive solution for the treatment of carotid artery disease, and offer a range of benefits over traditional surgical methods. These benefits include: faster recovery times, lower risk of complications, improved patient outcomes.

At [COMPANY], we are committed to providing healthcare providers with a range of cardiovascular therapies, including coronary intervention, cardiac rhythm management, and peripheral intervention. We believe that the Carotid Stent Systems will be a valuable addition to our portfolio, and we are eager to help you learn more about this innovative therapy.

I would like to take this opportunity to schedule a meeting with you to discuss the Carotid Stent Systems in more detail **and share an offer for \$100 Starbucks gift card for new patients considering this therapy**. I am available next week on Monday, May 18th at 2 PM, Wednesday, May 10th at 10 AM, or Friday, May 12th at 3 PM. Please let me know if any of these times work for you. I look forward to the opportunity to discuss this exciting new therapy with you in more detail. Thank you for your time and consideration.

Generative AI Example

Compliance Monitoring

Prompt

- Act as the FDA regulator enforcing compliance with The Physician Payments Sunshine Act which is designed to increase transparency around the financial relationships between physicians, teaching hospitals and manufacturers of drugs, medical devices and biologics. What parts of the following email from a sales rep to a healthcare provider be considered compliant and which would not be (and why)?

Response

As the FDA regulator enforcing compliance with “The Physician Payments Sunshine Act”, I would consider the following parts of the email from the sales representative to the healthcare provider to be non-compliant:

- "I am offering you \$100 Starbucks gift card for new patients who are considering this therapy."

This portion of the email violates the provisions of the Physician Payments Sunshine Act, which prohibits the offering of financial incentives or gifts to healthcare providers in exchange for promoting or prescribing specific products. The provision of a Starbucks gift card in this manner would be considered a financial relationship that could potentially influence the healthcare provider's decision-making, and would therefore not be considered compliant with the Act.

The remainder of the email, which simply introduces the new cardiovascular therapy and shares information about its potential benefits, would likely be considered compliant with the Physician Payments Sunshine Act.

It is important to note that compliance with the Physician Payments Sunshine Act is critical for maintaining the integrity of the healthcare system and protecting patients from potential conflicts of interest. Failure to comply with the provisions of the Act can result in significant penalties and reputational damage.

Generative AI Example

Compliance Monitoring Finance

Prompt

Act as the SEC regulator enforcing compliance with NYSE Rule 472 Communications with the Public, designed to prohibit the use of untruthful, misleading, or inaccurate statements in any form of communication with the customers or the public. What parts of the following email from an investment adviser to a potential client would be considered compliant, and which would not be (and why)?

Response

As an SEC regulator enforcing compliance with NYSE Rule 472 Communications with the Public, I would consider the following parts of the email compliant and non-compliant:

Compliant:

- The subject line "Unleash your wealth with explosive growth potential!" is not inherently misleading or inaccurate.
- The advisor's name and the investment firm's name are clearly stated.
- The email includes a disclaimer that the investment opportunity is not for the faint of heart and that it carries risk.

Non-compliant:

- The email opens with a leading question ("Are you tired of living a mundane life?") that has nothing to do with the offered investment opportunity.
- The email makes bold claims about the investment opportunity being a "once-in-a-lifetime chance" to achieve "true wealth" and the company being a "game-changer" and "destined for greatness." These claims are subjective and lack substantiation.
- The email states that the current sales and earnings projections must accurately reflect the company's growth potential. This statement could be considered misleading or inaccurate without additional context or evidence.
- The email suggests that the investment firm's track record speaks for itself and has a "proven history" of delivering exceptional returns. This statement could be misleading or inaccurate without specific data or disclosures about the firm's past performance.
- The email encourages the potential client to "unleash your wealth" and "live the life you've always dreamed of." These statements could be considered manipulative or misleading by implying that investing in the opportunity will automatically lead to significant wealth or a specific lifestyle.

The email contains several non-compliant statements that could be considered untruthful, misleading, or inaccurate under NYSE Rule 472 Communications with the Public. As the SEC regulator, I would require the investment advisor to revise the email to remove or modify these statements to ensure compliance with the rule.

Generative AI Example

Multimodal Applications

Prompt

Act as a real estate agent selling property in Whitfield Estates in Sarasota, FL. Mention the following key features a seven-stage lawn sprinkler system finished 3-car garage with AC. Use the following images to aid you in writing a description of the property for real estate websites.

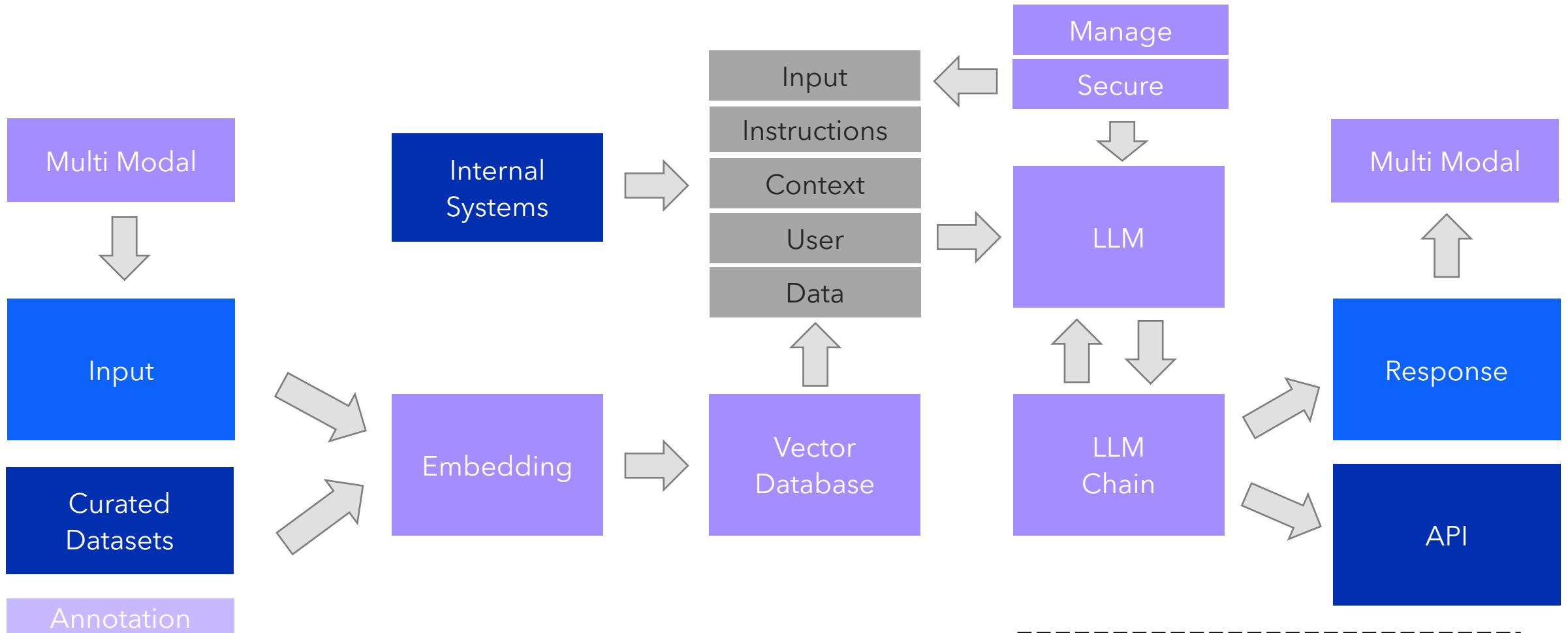


Response

Luxury custom estate home with water views of Sarasota Bay."West of the Trail" Built on what was originally three individual lots this home offers privacy in a neighborhood setting. In recent years the upgrades to the home totals over \$300k. Some of these upgrades include hurricane windows and doors, water filtration system, new electrical including the electrical panel, HVAC units, stone paver driveway, fully fenced, a seven stage lawn sprinkler system, finished 3 car garage with AC, and more! Inside you will find six bedrooms and eight bathrooms with upgraded fixtures. Two of the six bedrooms are owners suites, offering the owner a first or second floor option. Convenience of first and second floor laundry room. Entertain your family and friends in the large kitchen with maple cabinets, granite countertops, two full size refrigerators, a viking range, stainless steel appliances, under cabinet lighting and travertine flooring. Enjoy fun in the sun poolside, in the heated saltwater pool and spa. Caged and surrounded by stone pavers the pool area offers additional space to entertain. Whitfield Estates was established in the 1920's and has a park like setting that you will immediately notice as you drive around this lovely neighborhood. Tree lined streets and sidewalks make this neighborhood perfect for dog walking and meeting neighbors. Nearby is the Ringling Museum of Art, New College, the University of South Florida, the Ringling College of Art and Design, the Asolo Theater, Sarasota Bradenton International Airport and downtown Sarasota. Lido Key is only 6 miles away as well as popular St Armand's Circle. Whitfield Estates has a voluntary neighborhood association that meets 6 times a year at the Sara Bay Country Club. Dues are optional \$30 annually, HOA membership includes dining at Sara Bay Country Club.

Logical Architecture

Architectures need new components to support Generative AI use cases including LLMs



Generative AI Considerations

Build vs. Buy Considerations

The decision on building or buying depends on the specific requirements and use cases.

- When considering whether to incorporate natural language processing, many people need to pay more attention to the perceived complexity of the task. Modern-day NLP operates with Large Language Models (LLMs) that learn from large amounts of data.
 - Most use cases don't require training a new language model. There are already tens of thousands of pre-trained models freely available online, which can be used out of the box - depending on the use case to be implemented.
 - Still, many use cases benefit from fine-tuning or domain adaptation, refining a pre-trained language model on a smaller custom dataset.
- There are many elements to consider if you plan to train a new language model. To find suitable models for your use case, it's helpful to think about a couple of questions in advance:
 - ✓ How fast does it need to be?
 - ✓ How accurate does it need to be?
 - ✓ What are the penalties for inaccurate results?
 - ✓ How much high-quality data do you have?
 - ✓ What computing resources do you have?

Slalom's AWS Generative AI Solutions

Ways to jumpstart our client's journey

Educate & Enable



[Generative AI Executive Train Workshop](#)



[Generative AI-Enabled Strategy](#)

Experiment & Learn



[Generative AI Proof of Concept](#)



[Generative AI Innovation Lab](#)

Build & Scale



[Generative AI Production Deployment](#)

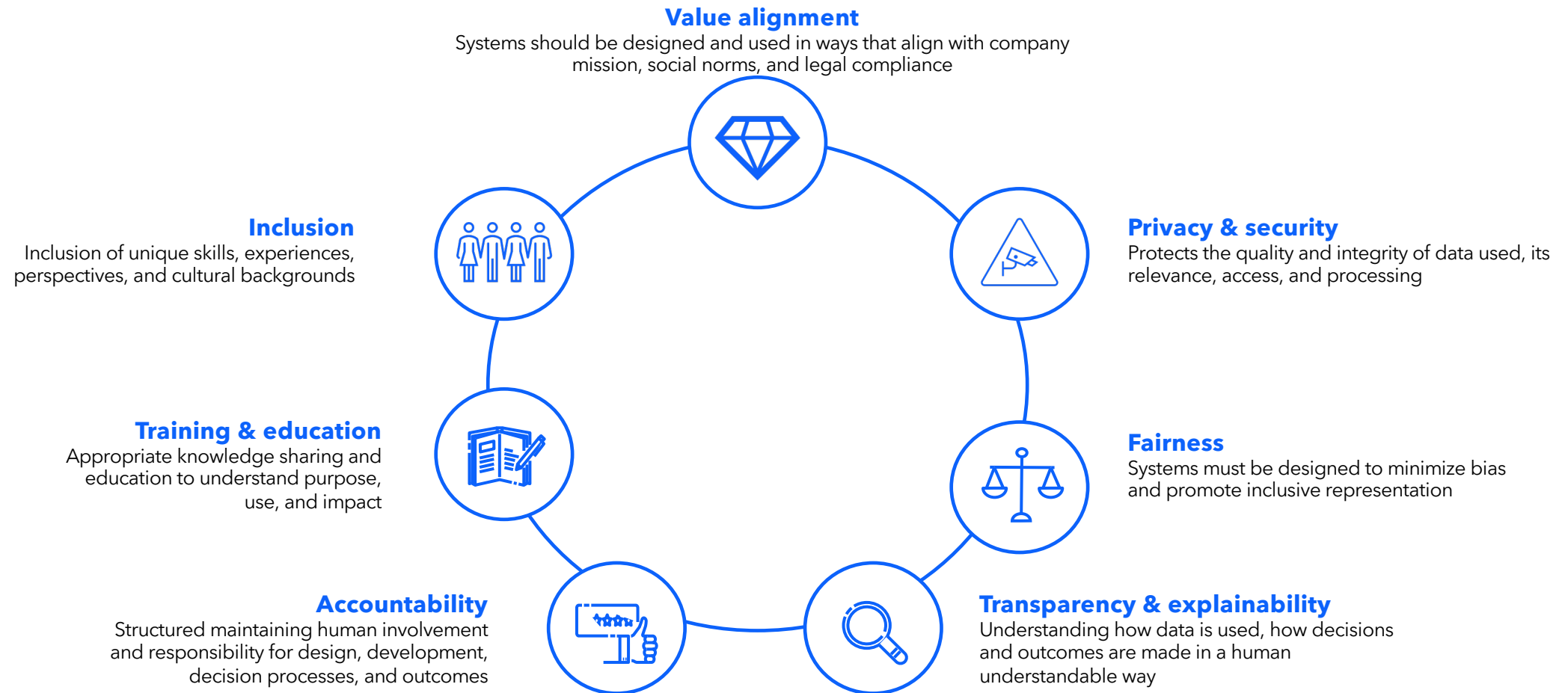


[Generative AI Production Line](#)

Generative AI Considerations

Responsible AI

When implementing any AI initiative, organizations should take into consideration the main pillars of responsible AI:



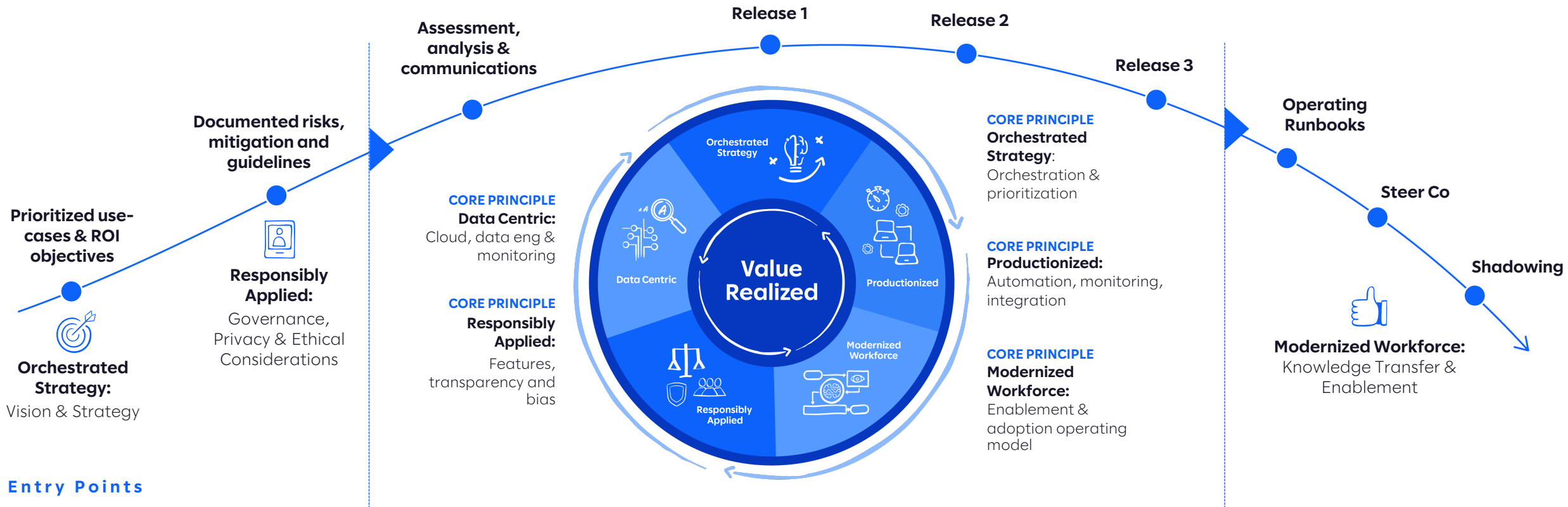
AI Core Principles

Realizing value from AI initiatives requires a holistic approach



Business Transformation with AI

Blueprint and resources to orchestrate multiple capabilities to accelerate business impact



Entry Points

- 1 Stakeholders**
Understanding of the imperative
- 2 Strategy**
Align vision to strategic priorities
- 3 Pipeline**
Emerging evidence of success
- 4 Pilots**
Validate business result
- 5 Deployment**
Operationalize & in users' hands
- 6 Factory**
Scale & enhance