

AWS re:Invent

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LFS201

Commercial Innovation at Moderna using Amazon Connect and AI

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Agenda

AWS for Health

Innovation at Moderna

Deep dive into Moderna Commercial Excellence—contact center

Deep dive into Moderna CRM integration



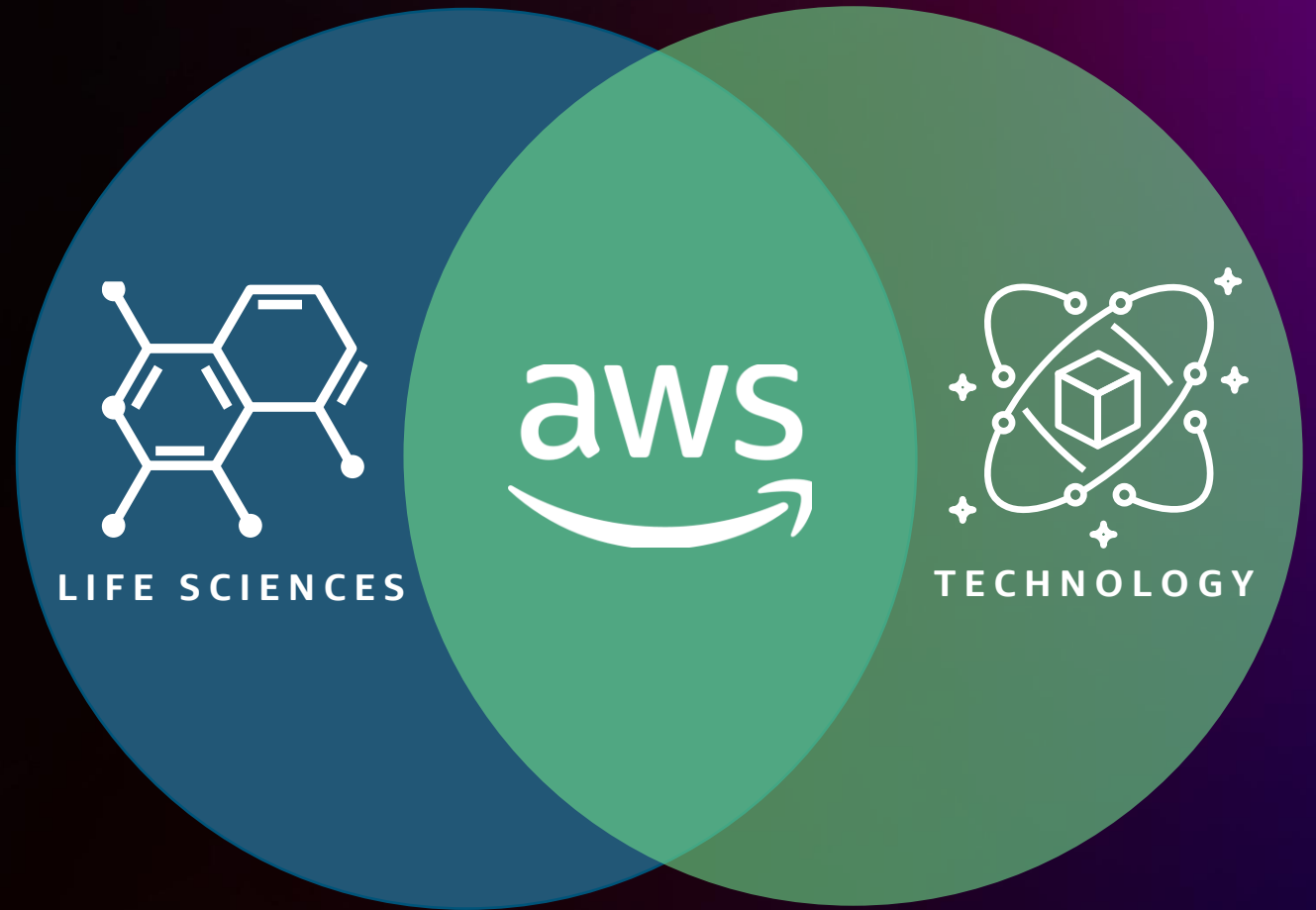
To make early cancer detection
accessible to all, and make
“if we’d only known sooner”
a phrase of the past

IS MY WHY.

Jeff Caron

Senior Manager, Principal Consultant
Healthcare and Life Sciences

AWS is how.
Supporting innovation
at the intersection of
science & technology.



AWS for Health



OMICS



HEALTHCARE



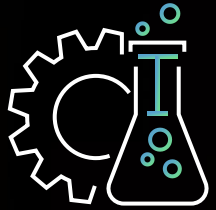
LIFE SCIENCES

Accelerating innovations from benchtop to bedside



AWS for Health provides healthcare and life sciences organizations with the right tools, data, expertise, and security to innovate on behalf of the patient

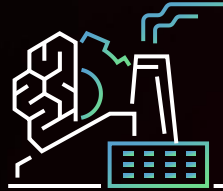
Supporting innovation & operational excellence across the value chain



Research
& discovery



Clinical
development



Manufacturing
& supply chain

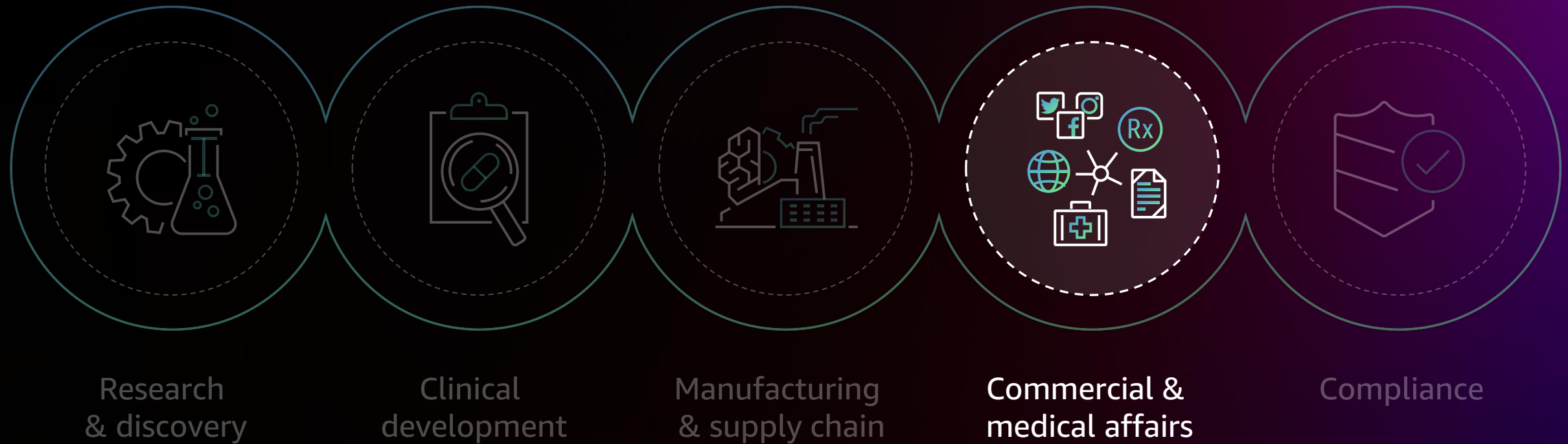


Commercial &
medical affairs



Compliance

Supporting innovation & operational excellence across the value chain



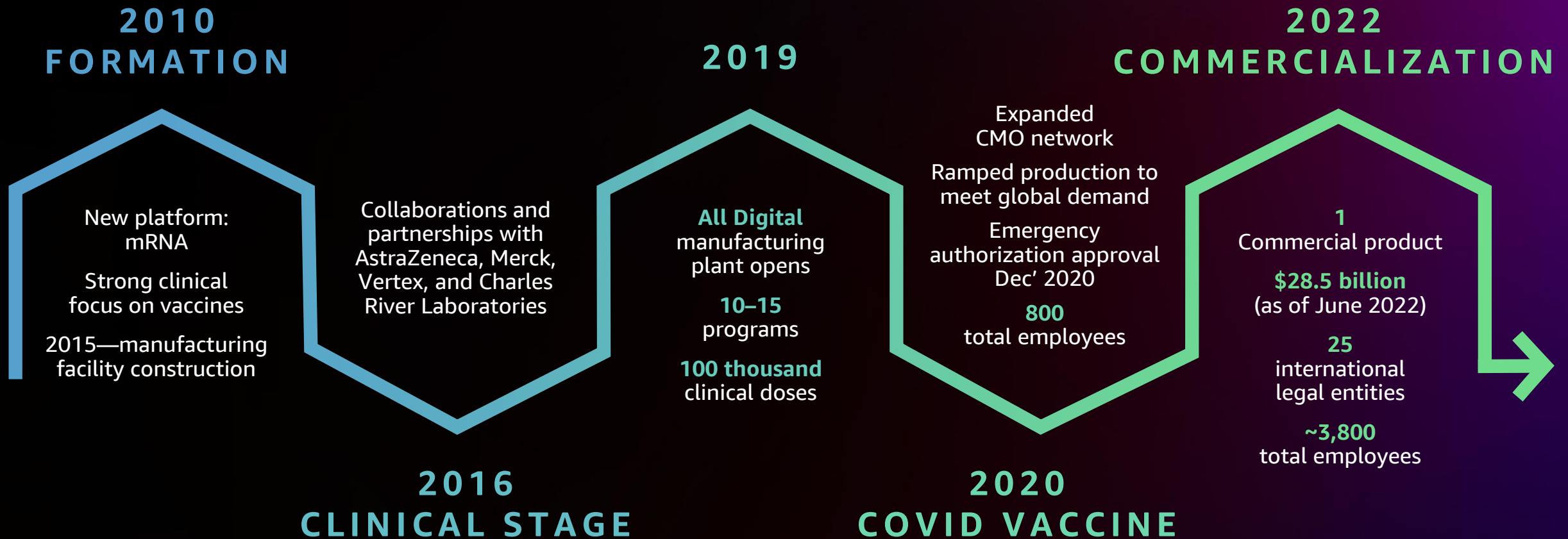


Creating a better future for the next generation where **transformative medicines are accessible for all** around the world, especially the economically disadvantaged, underserved, marginalized, and vulnerable

IS MY WHY.

Barbara Salami
VP, Digital for Commercial
Moderna

A fascinating journey



Moderna is more than a COVID company

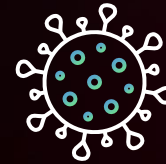
MODERNA'S INNOVATION PIPELINE

moderna

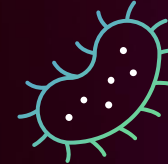
SEVERAL THERAPEUTIC AREAS OF FOCUS, INCLUDING



Respiratory
vaccines



Latent and public
health viruses



Rare
diseases



Oncology

46

Products in pipeline

31

Ongoing clinical trials

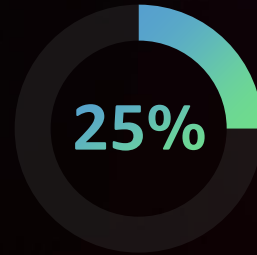
Vested in global health equity, diverse workforce, and a sustainable future

**800
MILLION**

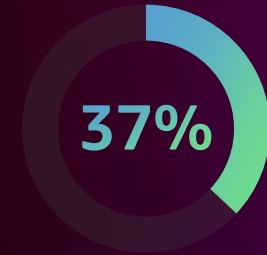
delivered
vaccine doses

NET ZERO

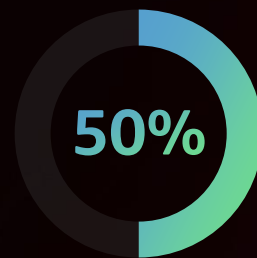
commitment
by 2030



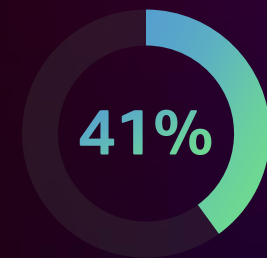
COVID-19 vaccine doses
delivered in 2021 went to low-
and middle-income countries



clinical trial participants
were of racially and ethnically
diverse backgrounds

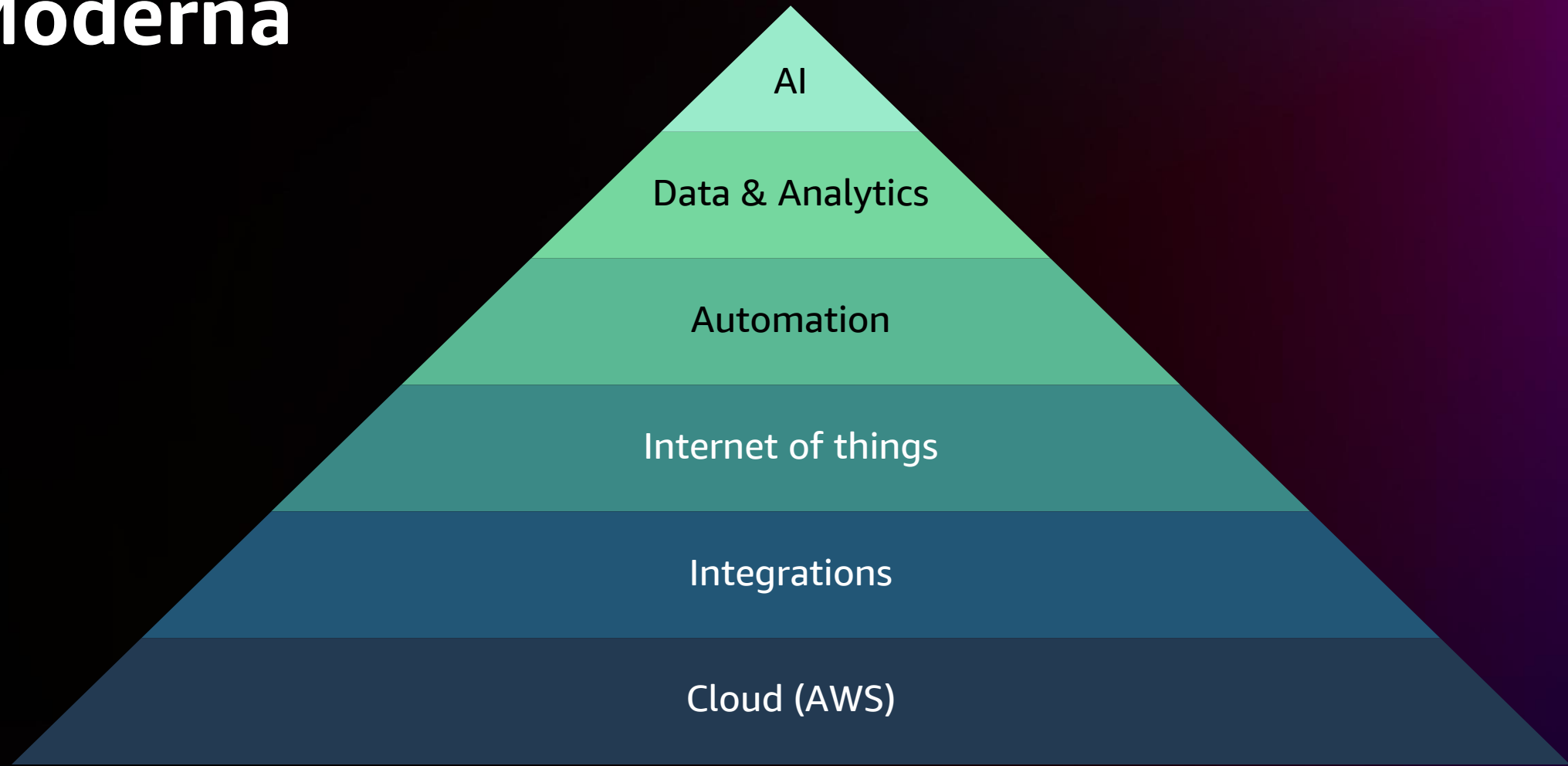


Moderna workforce are women



racially and ethnically diverse
backgrounds at Moderna

Digital is the backbone of everything we do at Moderna



MODERNA'S DIGITIZATION BLOCKS

We have 12 mindsets that guide how we show up every day

We push past possible

We pivot fearlessly in the face of new data

We digitize everywhere

We question convention

We remove viscosity

We act like owners

We act with urgency

We pursue options in parallel

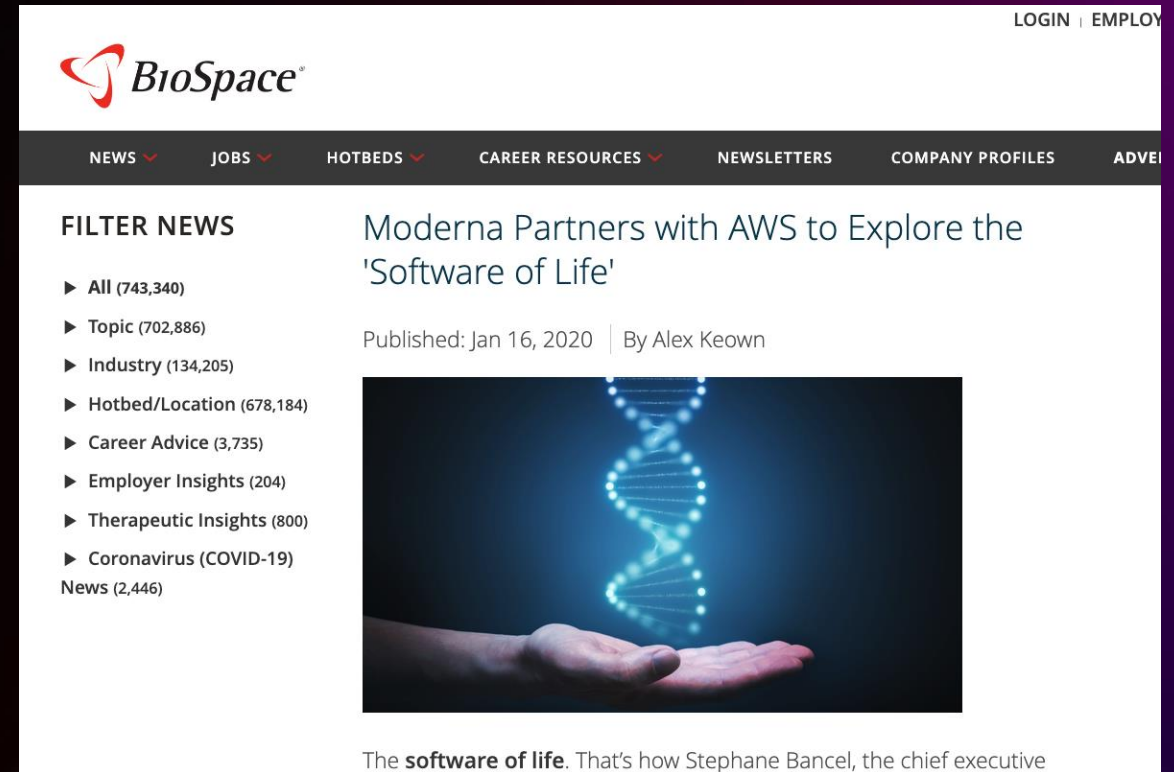
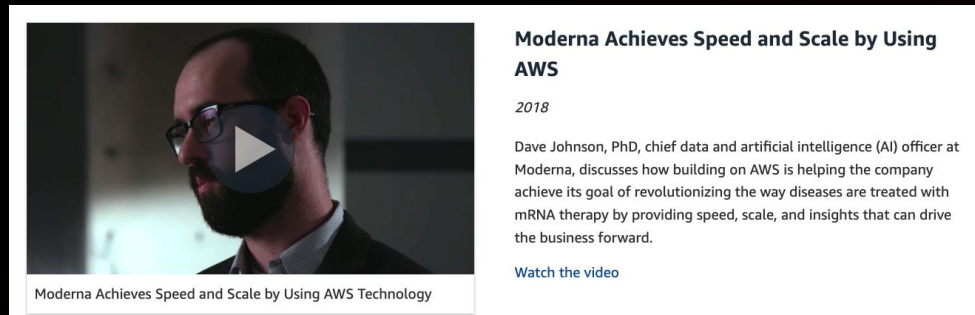
We accept risks

We obsess over learning

We act with dynamic range

We prioritize the platform

Moderna and AWS collaboration: 10 years strong



Moderna and AWS collaboration: 10 years strong

Research and
development

Data science and
artificial intelligence

Pharmacovigilance

Commercialization

Growing scope of AWS collaboration based on proven successes

AWS suite of
technology
products

AWS professional services

AWS enterprise support

AWS prototyping team

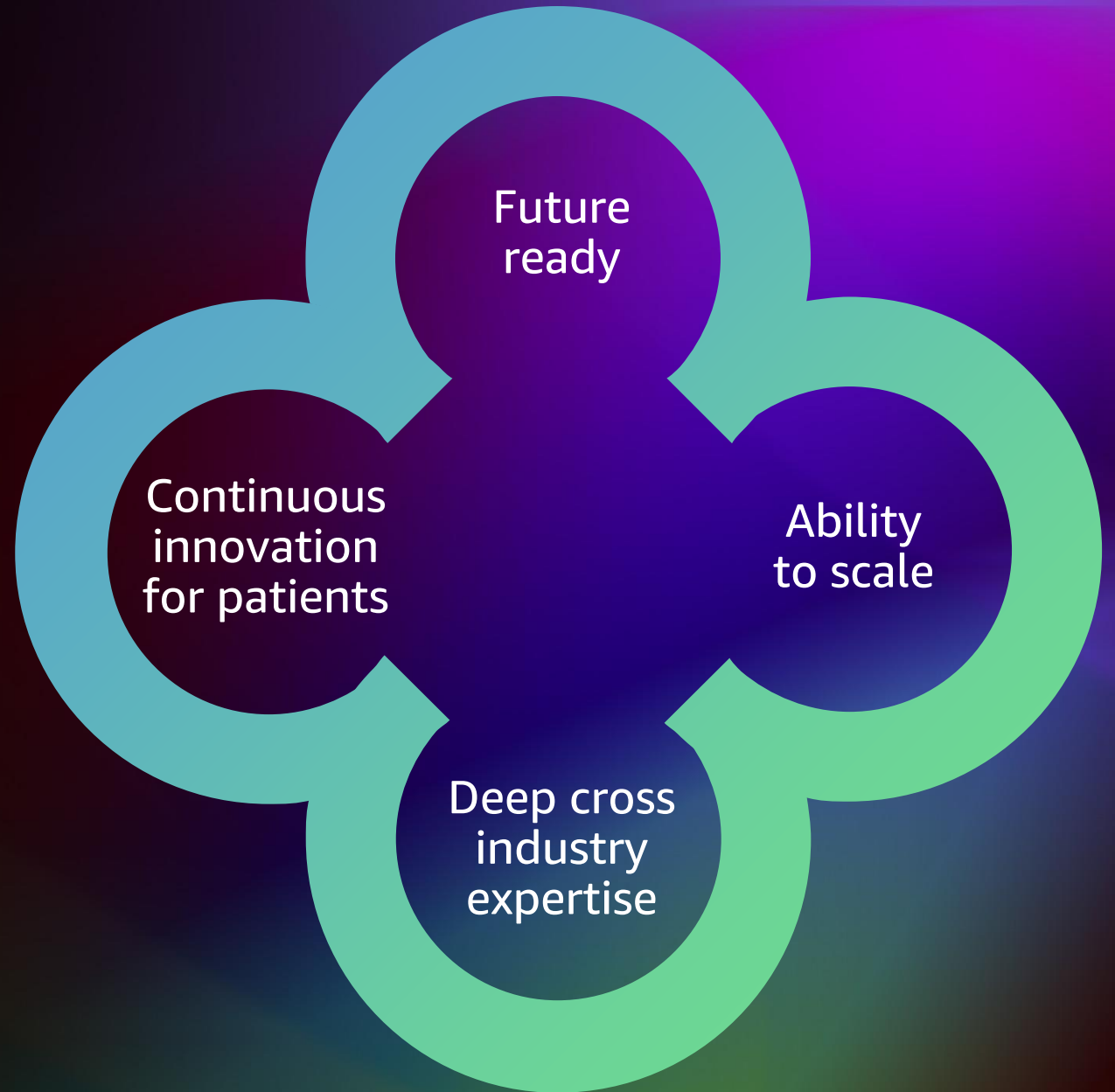
AWS digital innovation
and data-to-everything

AWS training
and certification

AWS partners

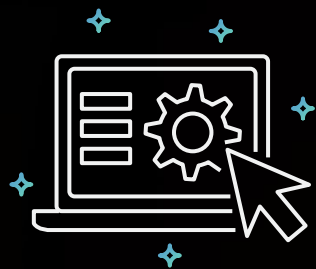


Why an AWS collaboration continues to be important to Moderna

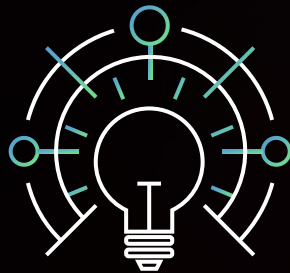


Collaborating beyond the technology

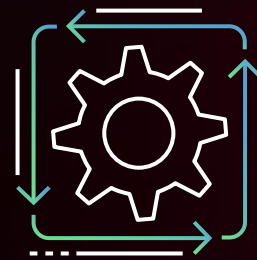
REIMAGINE HOW WE COMMERCIALIZE DIFFERENTLY AND DELIVER TRANSFORMATIVE EXPERIENCES
ACROSS THE ECOSYSTEM



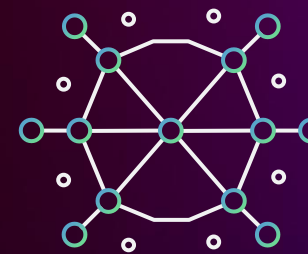
Art-of-the-possible
workshops



Idea
generation



Working backwards/
PR FAQ as a practice



Applied innovation
framework

We push past possible for the moonshot, experiment and pivot fearless in the face of new data

INNOVATION PORTFOLIO

1

Moderna OC3

2

Intelligent assistant library

3

Digital solutions for B2B2C

4

Intelligent content review

Big bets

*Innovation queue/backlog
of big bets that will move the needle*



**Run innovation
accelerators**
Drive innovation



Success is the sum of small efforts—repeated day in day out and the determination that whether we win or lose, we have applied the best of ourselves

IS MY WHY.

Arpita Bhowmick
Director, Global Contact Center Technology
Moderna

Moderna Commercial Excellence: Contact Center

Our Aim: To ensure that we have the ability to deliver impactful, personalized experiences with agility to match the dynamic changing needs of patients and the broader ecosystem

What is OC3? Moderna's Omnichannel Global Cloud Contact Center platform

THE OC3 PLATFORM DEFINE AND LAY THE FOUNDATION FOR A CONSISTENT CUSTOMER EXPERIENCE IN ALL THEIR INTERACTIONS WITH MODERNA

What is the OC3 program?



OC3 is a technology transformation that will help Moderna provide a streamlined customer interaction experience across all lines of business and markets

Why is it important?



- Provide a consistent customers interaction experience
- Transfers control and ownership of customer interaction data to Moderna
- Furthers Moderna's vision of being a data-driven organization
- Takes us closer to AI-driven capture of adverse events and product quality complaints

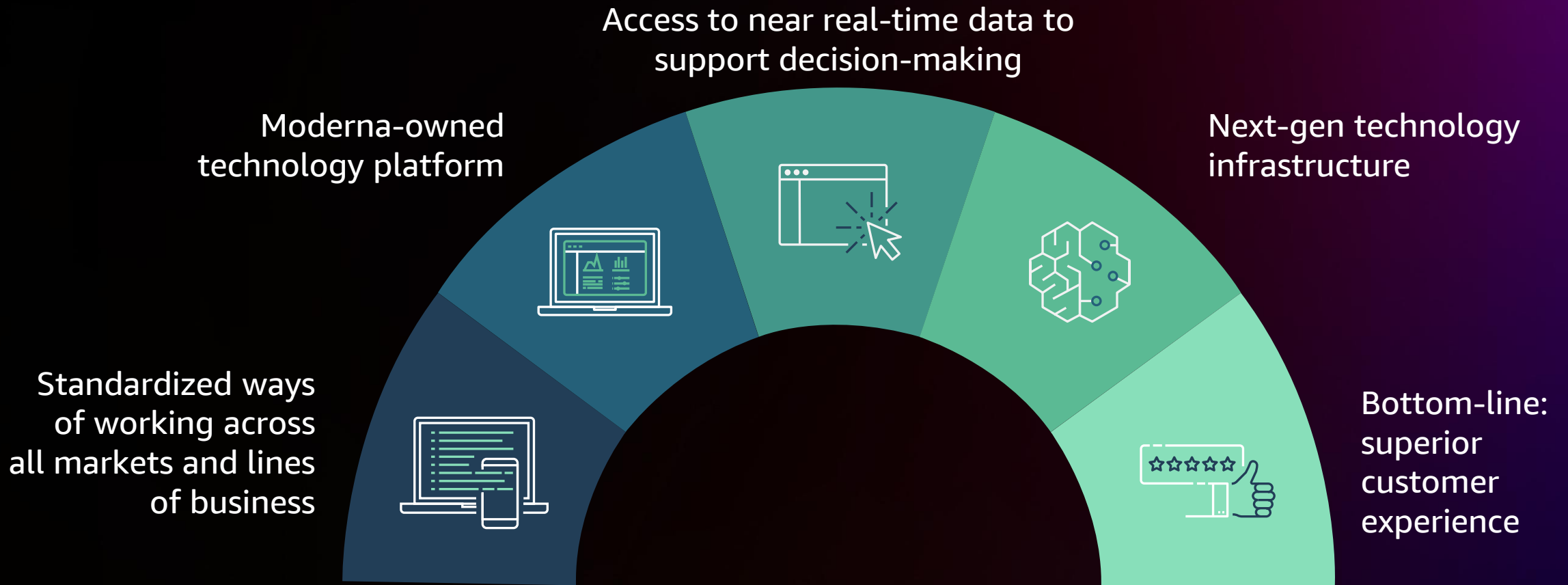
How does it work?



- An integrated Salesforce and Amazon Connect ecosystem for a seamless call flow
- Introduces additional channels such as voice bots, chat, and SMS
- Systems owned by Moderna; resources provided by partners—vendor agnostic

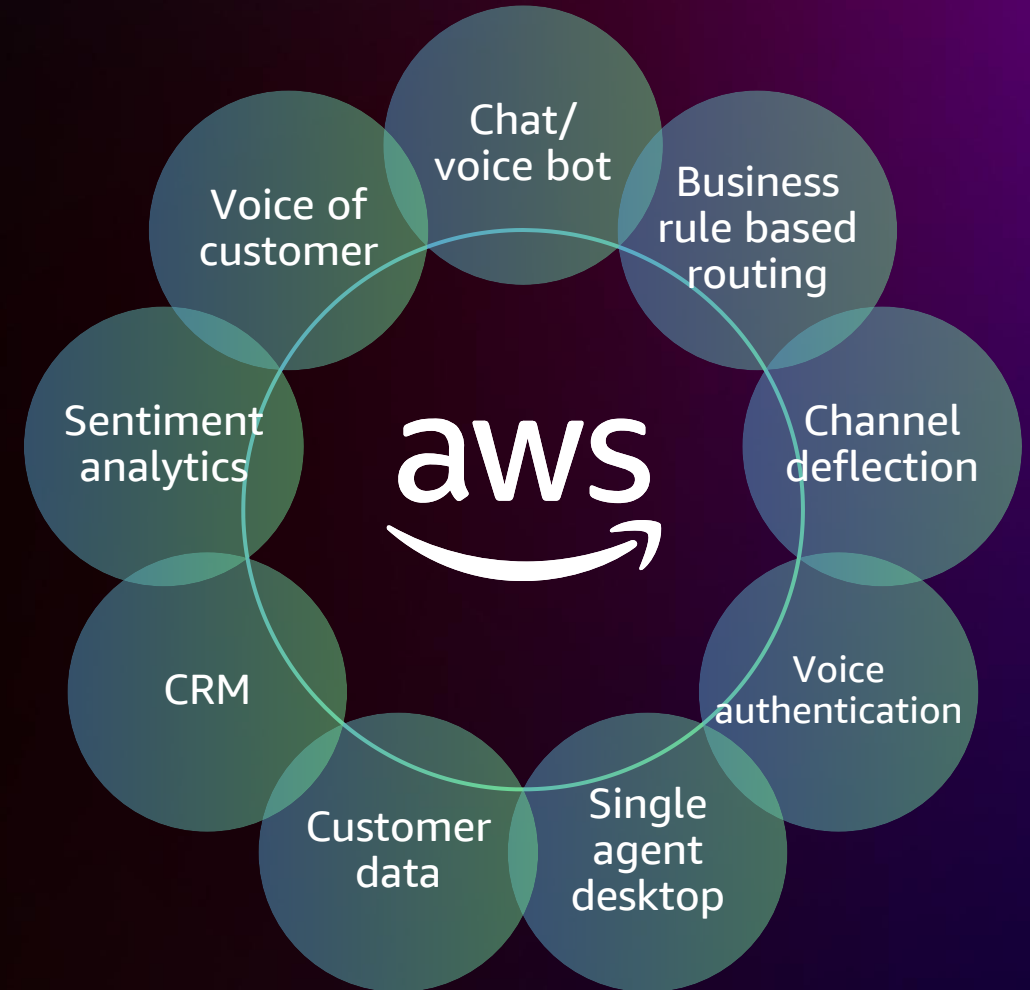
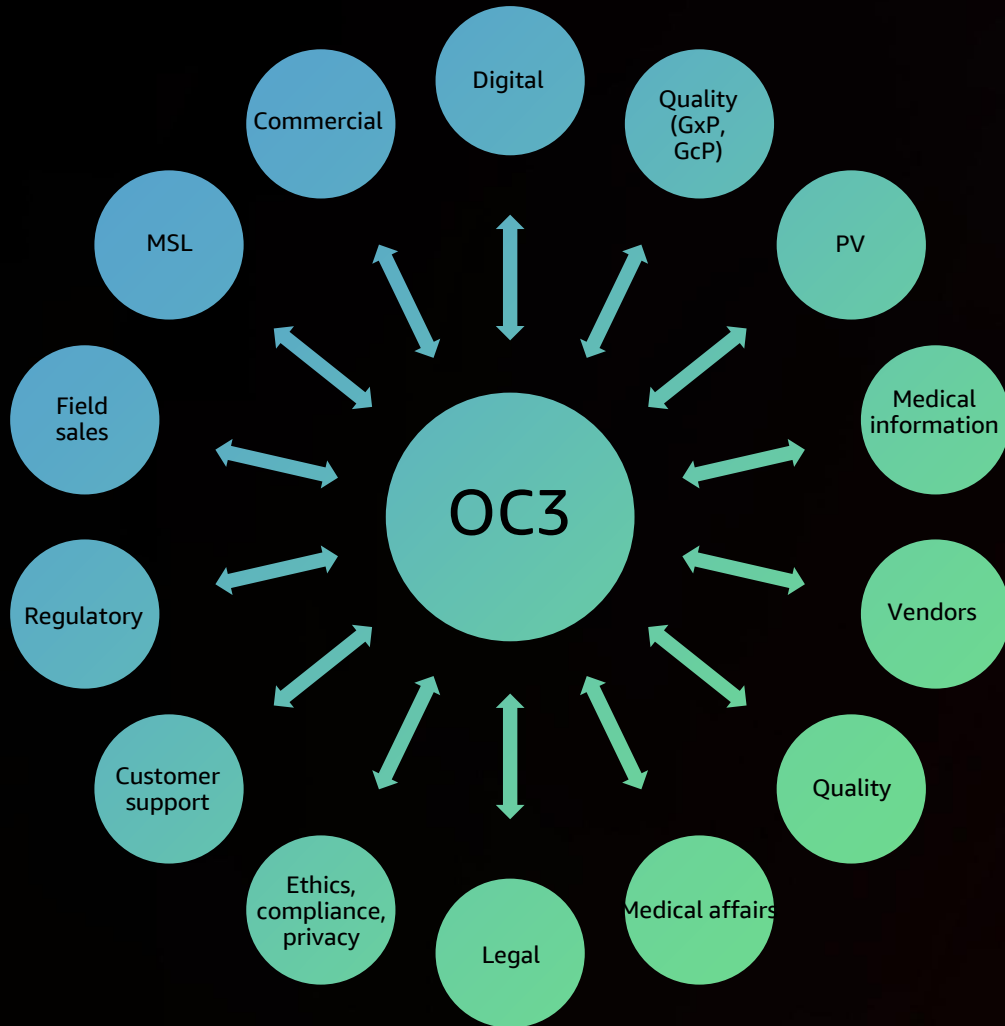
How OC3 benefits Moderna

TRANSITIONING FROM A GEOGRAPHICAL EXTERNAL VENDOR SUPPORT APPROACH, TO A CENTRALIZED CLOUD SYSTEM WILL ALLOW MODERNA TO TAKE OWNERSHIP OF THEIR CONTACT CENTER AND ULTIMATELY LEAD TO AN OMNICHANNEL SUPPORT MODEL

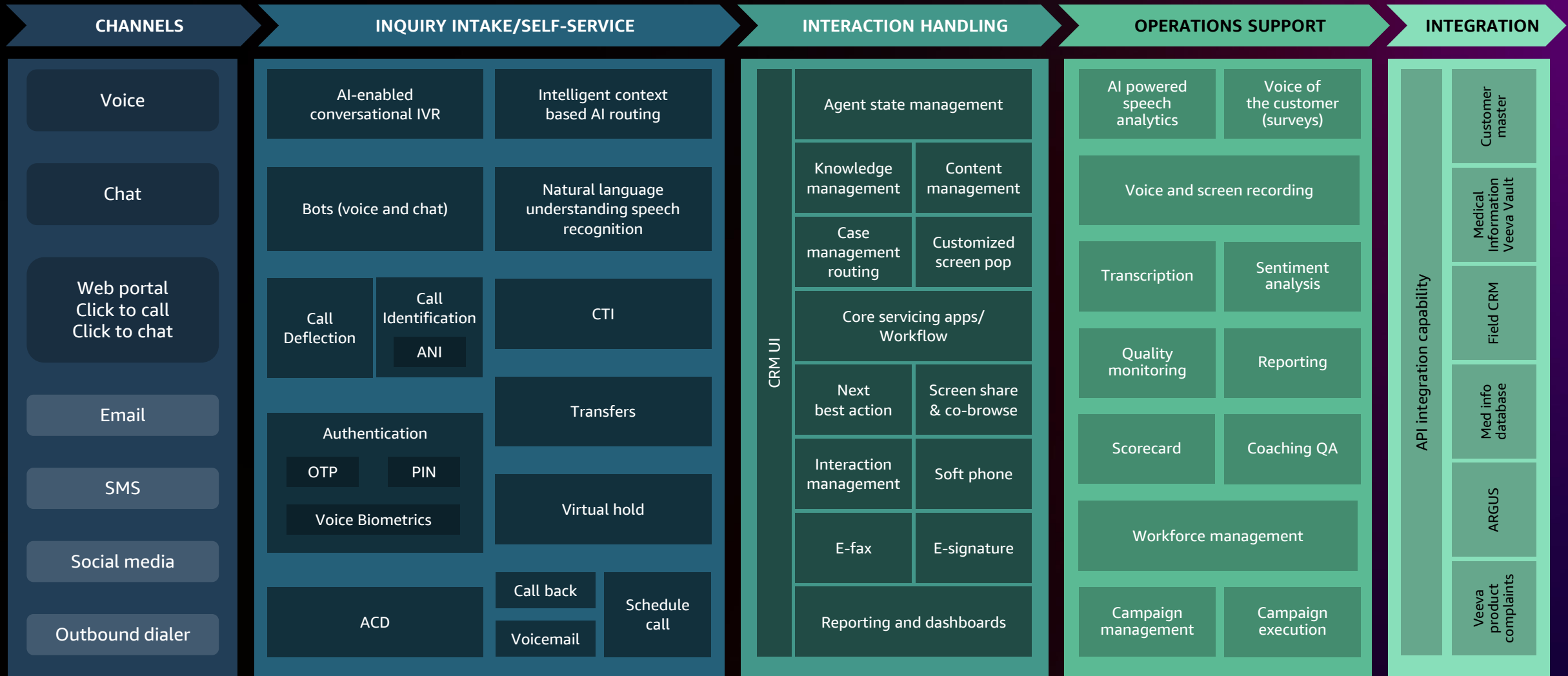


The natural fit between Moderna and AWS

AWS AS NATURAL FIT FROM A TECHNOLOGY STANDPOINT TO BUILD THE BEST-IN-CLASS INTEGRATED CONTACT CENTER PLATFORM CATERING TO ALL MODERNA'S BUSINESS FUNCTIONS



Contact center capabilities



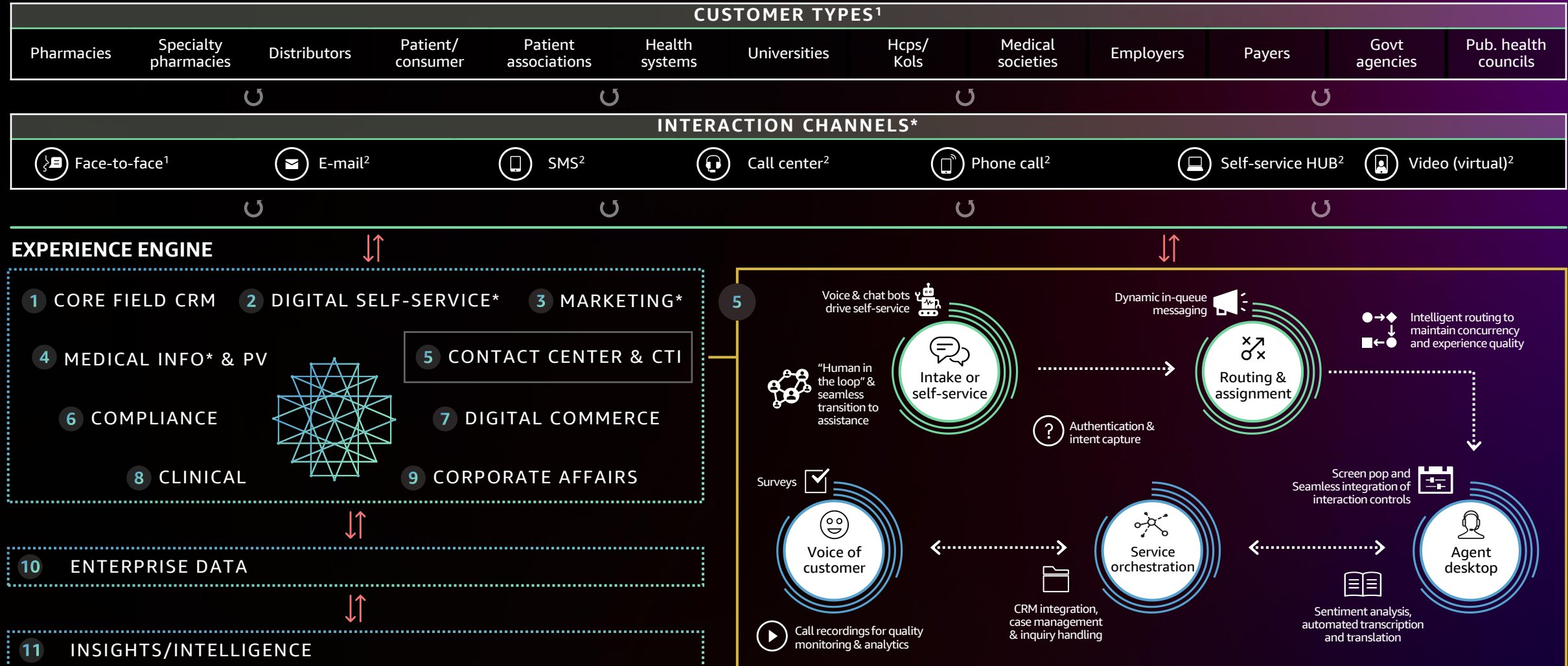
Moderna Commercial Excellence: CRM integration

CRM integration Goal: To unlock
a single and 360 degree view of
the customer to power
exceptional experiences

AWS and Salesforce

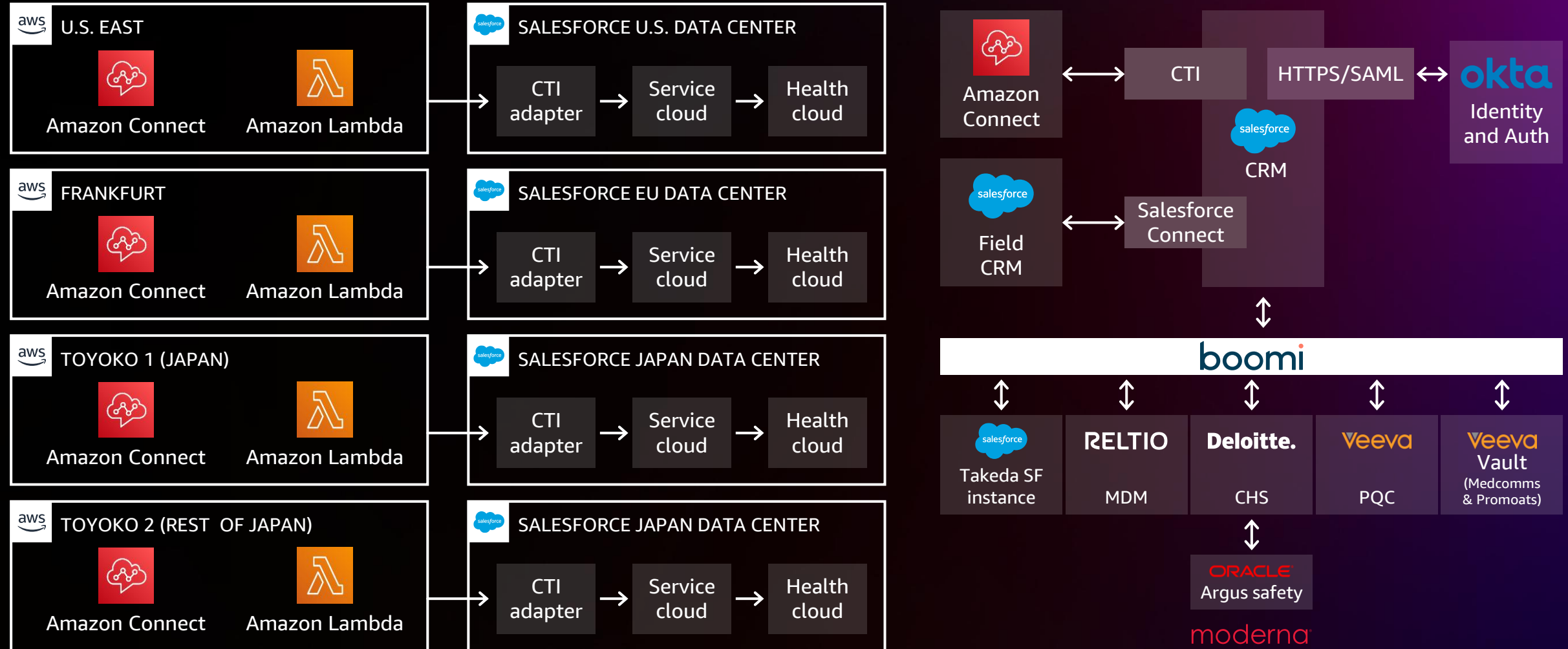
AN INTEGRATED EXPERIENCE ENGINE, AN ECOSYSTEM APPROACH

¹IN PERSON ²DIGITAL



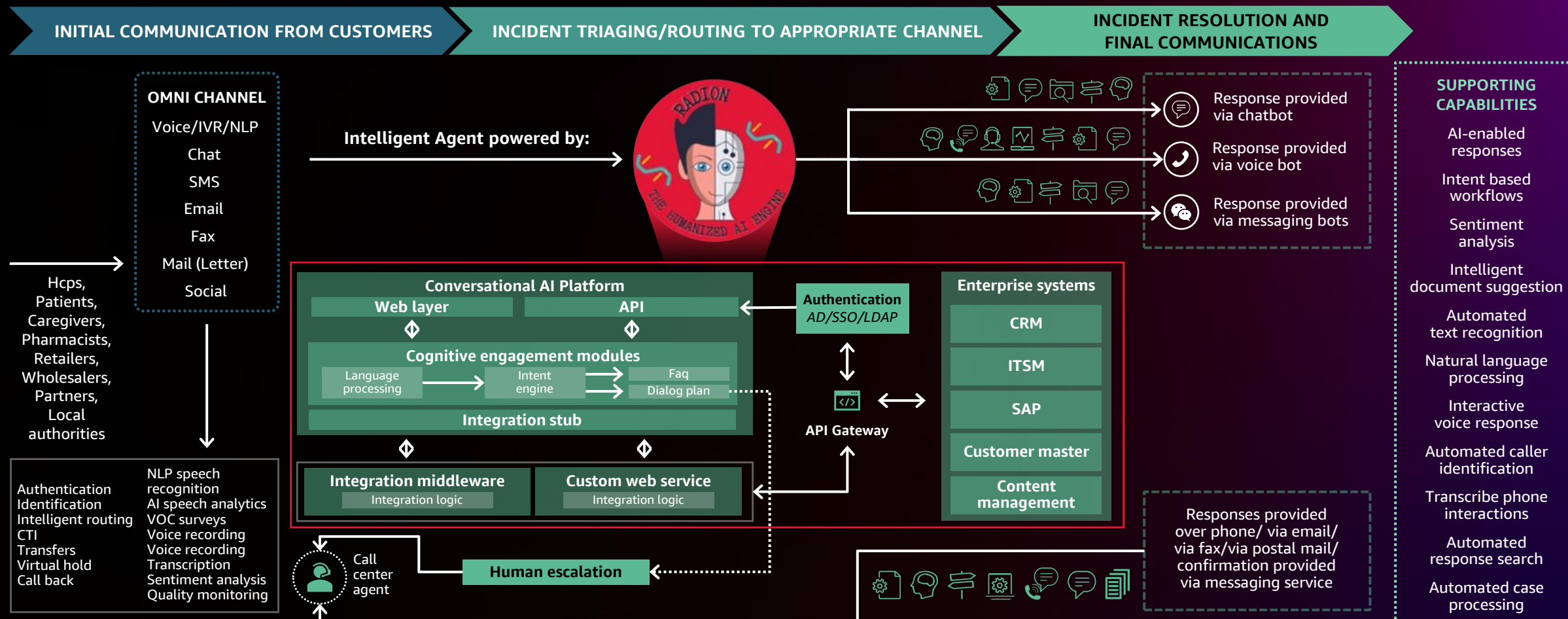
Architecture

A RISK-BASED COMPLIANCE DRIVEN APPROACH

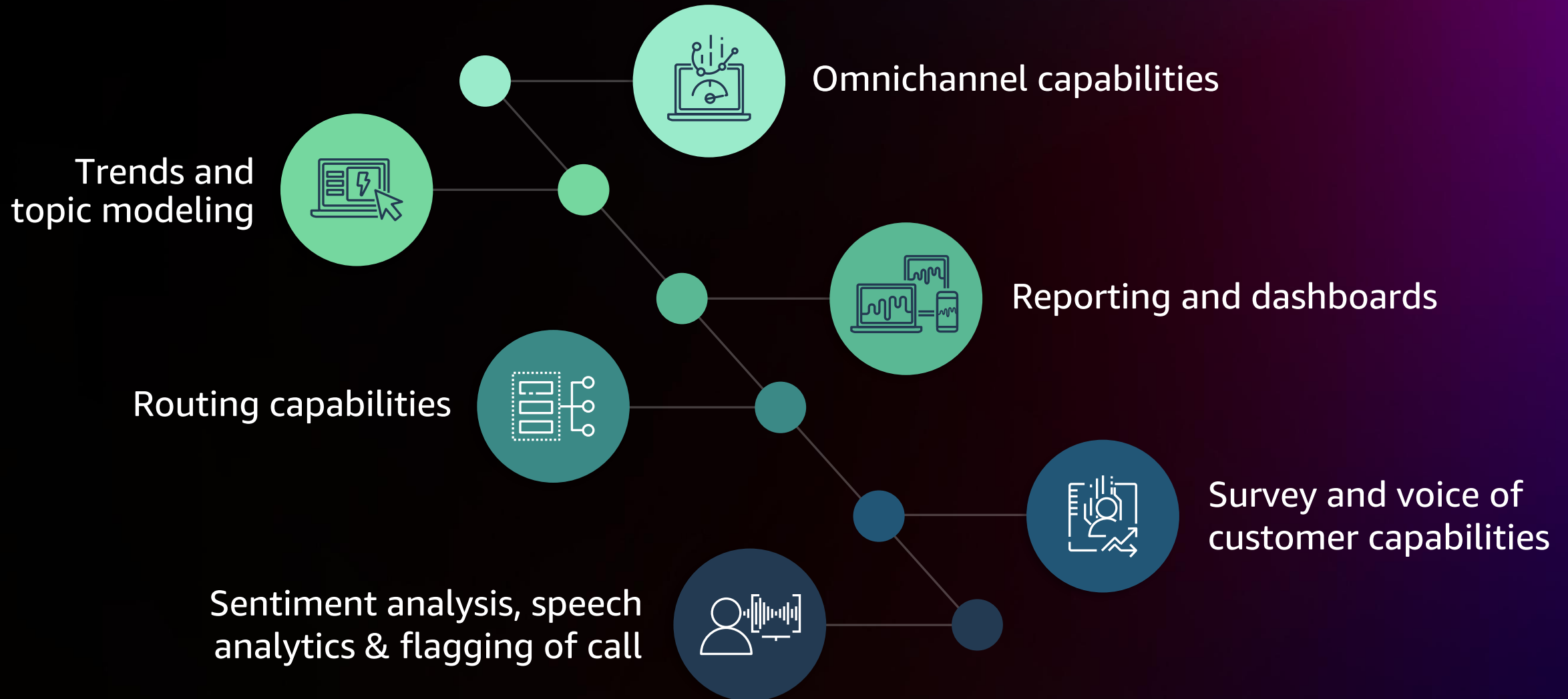


Moderna NLU AI engine and conversational AI capabilities and functions

HOW CAN THIS IMPACT MODERNA'S CAPABILITY TO PROVIDER PERSONALIZED MEDICINES—LOOKING TO FUTURE



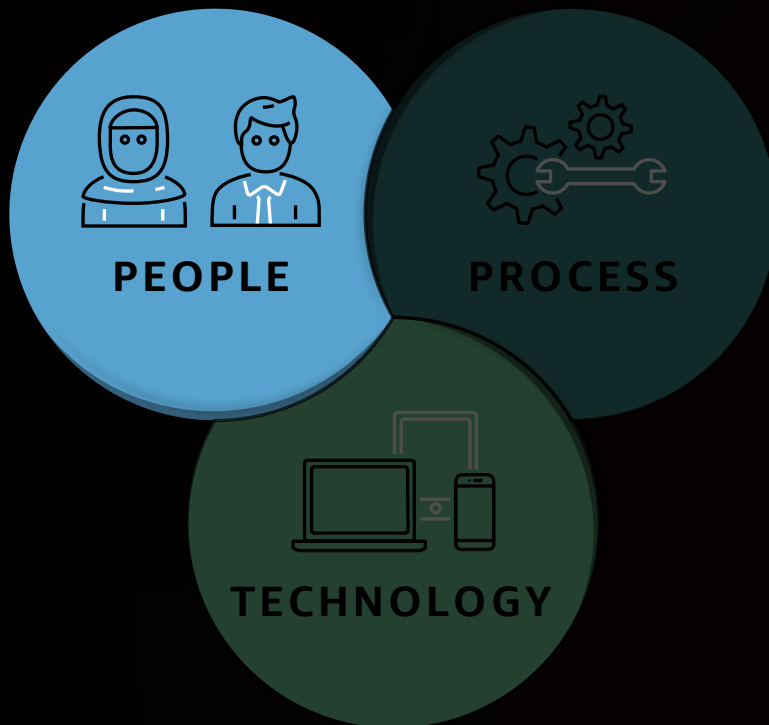
Additional capabilities and outcomes



Qualitative benefits of superior customer experience delivery

TRANSLATE INTO LONG-TERM SAVINGS THROUGH INCREASED RETENTION & BRAND LOYALTY

SUMMARY OF BENEFITS



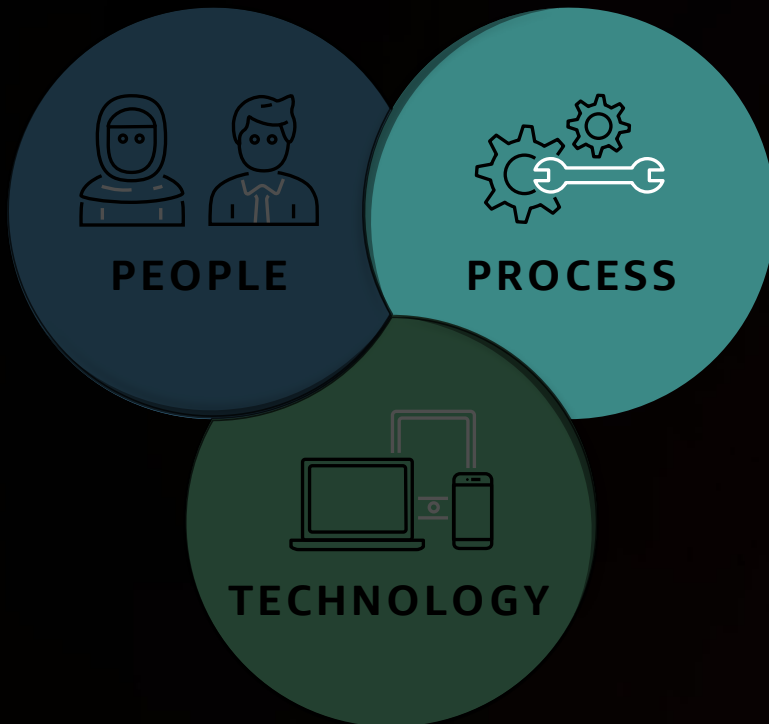
PEOPLE

- Improved customer satisfaction & reduced customer effort
- Better employee experience
- Consistency across channels
- Increased omnichannel self-service options
- Champion the customer experience through voice of customer

Standardization across functions and regions and end-to-end metrics tracking

ENABLE FASTER REALIZATION OF BUSINESS GOALS

SUMMARY OF BENEFITS



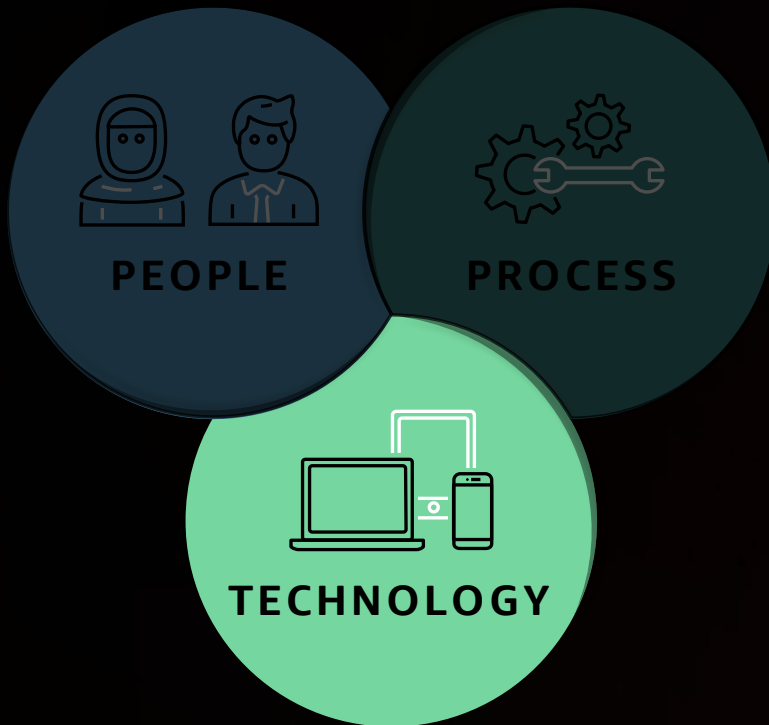
PROCESS

- Standardization
- Vendor oversight and accurate forecasting
- Increased compliance and reduced risk
- Enabling metrics tracking to focus on business outcomes
- Driving continuous improvements

Agility to respond to market conditions and creating value for customers

QUICKLY IDENTIFYING & SERVICING NEW NEEDS ARE SOME ADDITIONAL VALUE DRIVERS

SUMMARY OF BENEFITS



TECHNOLOGY

- Speed to market
- Scalability
- Realize long term IT vision
- Flexibility
- Leverage insights and deploy innovative use cases

Other considerations

INTEROPERABILITY

Implications of integration on enterprise data and analytics strategy

BOTS TO FINE BALANCE WITH HUMAN AGENTS

Fall back strategy and seamless contextual transfer across channels

TECHNICAL DEBT

Implications on ongoing maintenance of platform based on customizations required to build the desired capabilities

IMPLEMENTATION & SUPPORT

Implications of implementation and support models (build, operate, maintain, transfer considerations)

TIME TO MARKET

Implications on time to market based on the customizations, integrations, and overall phasing of solution



How it is a brand new, iterative, customer first experience

CUSTOMER INTERACTION EXPERIENCE: GO-TO-MARKET APPROACH



DIRECTED SPEECH

IVR experience that does not require pressing a button on the phone

Example: "say one" instead of press one. Alternatively, the caller can still proceed by pressing 1.



NATURAL LANGUAGE IVR

IVR interaction which includes natural language understanding

Interactions, experience that will start as "how can I help you?"

Can be answered by a caller as a free speech as well: "I am calling to report a side effect"

The NLIVR will triage the call and transfer the correct agent queue



CONVERSATIONAL IVR/BOT/IVA/CRM INTEGRATION

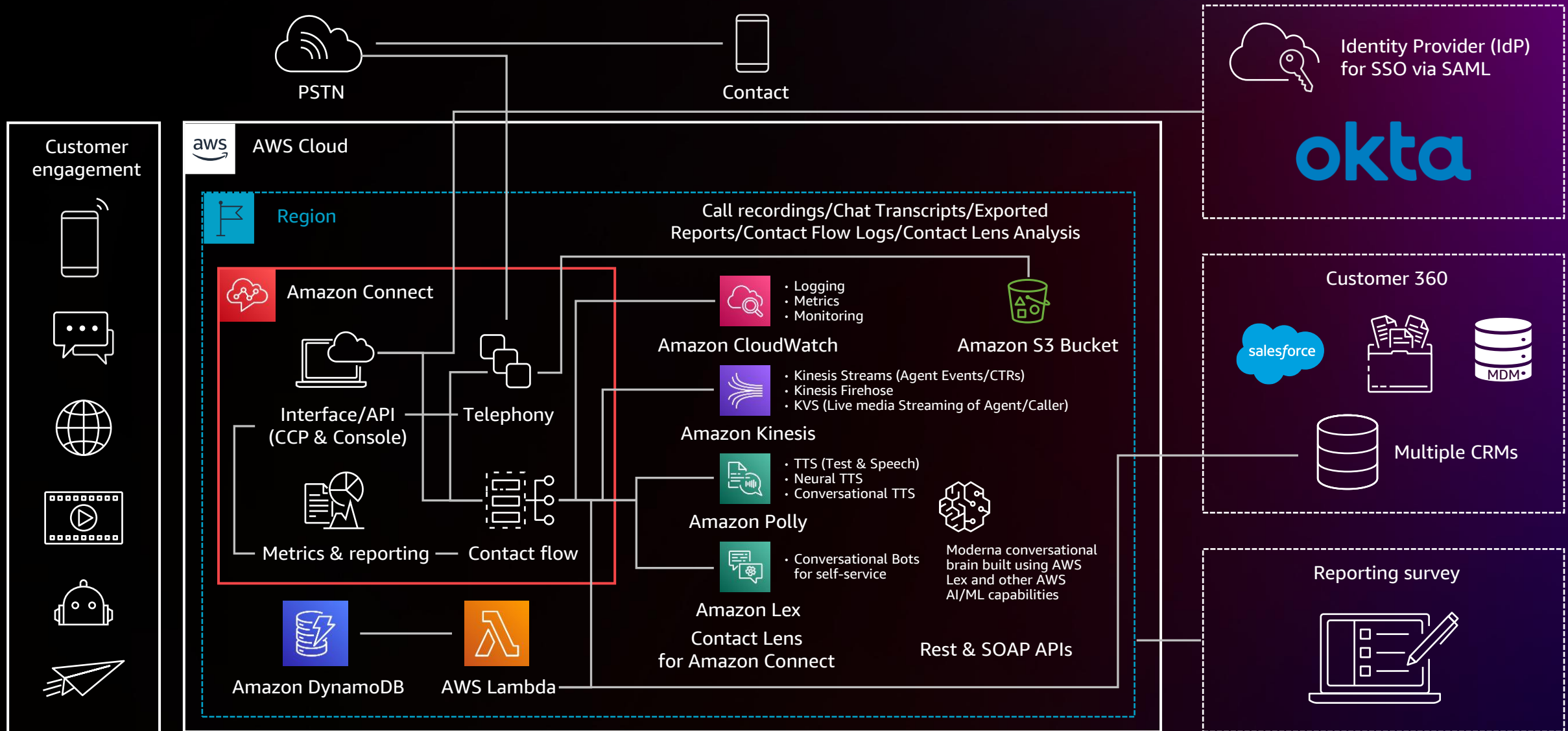
IVR interaction, which includes natural language understanding, processing, and fulfillment of the request

Interaction experience that will start as "how can I help you?"

Can be answered by a caller as free speech: "I am calling to report a side effect"

The conversational IVR/BOT will triage the call and fulfill the caller's request by presenting self-service options like capture the call reason/information, open a case and eventually transfer to the correct agent queue (If needed)

Architecture



Key learnings

High-touch servicing needs to become high value servicing

Think BIG! Determine future business and capability needs

Identify the high-level costs and benefits to reach target state experience

Define and describe a roadmap to implementation

Understand Interactions between different AI applications

Secure senior management commitment

Feedback loop and continuous learning

Early buy-in from businesses

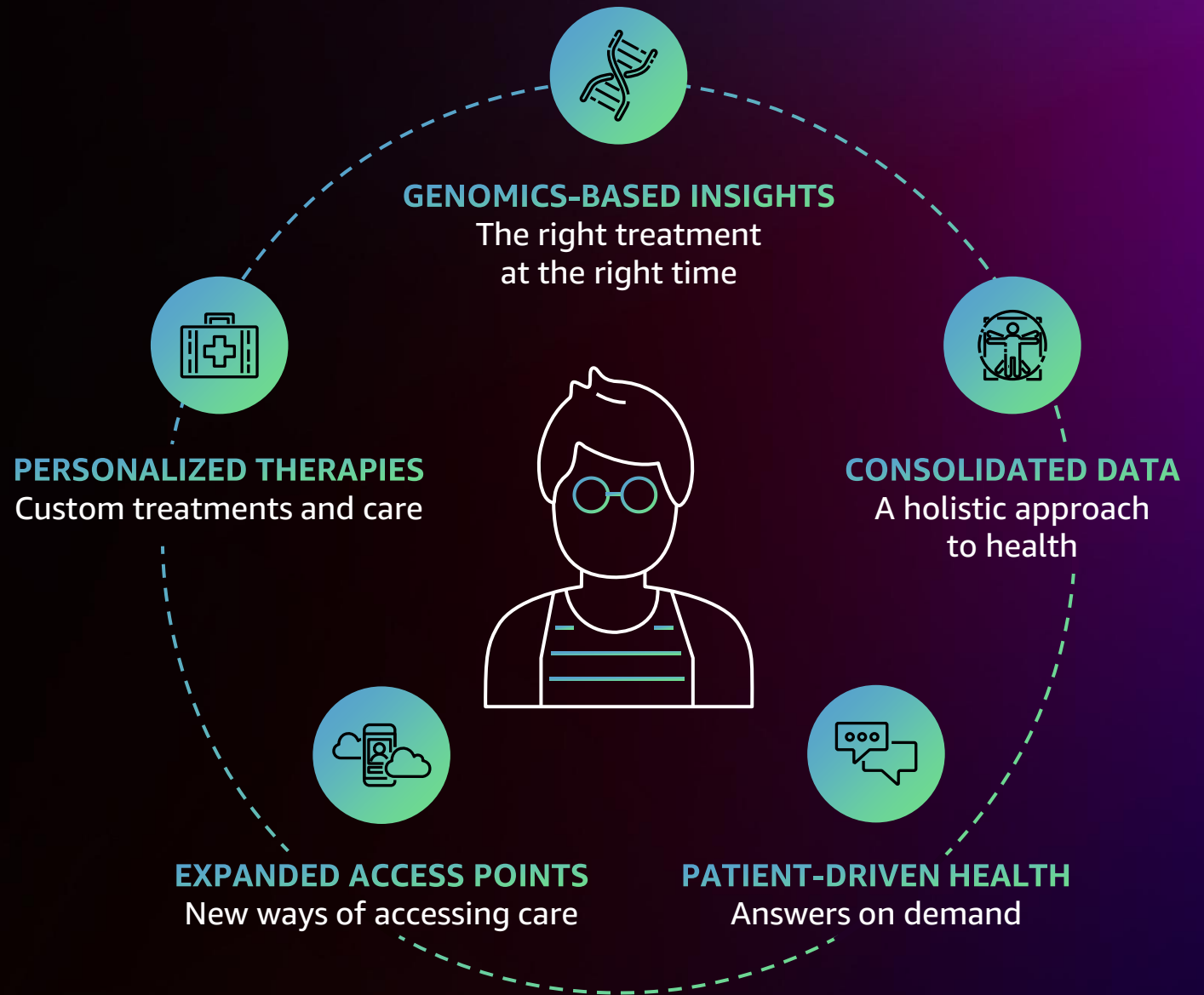
Combining conversational AI with people in contact centers puts more of the routine on the machine

Focus on building voice library

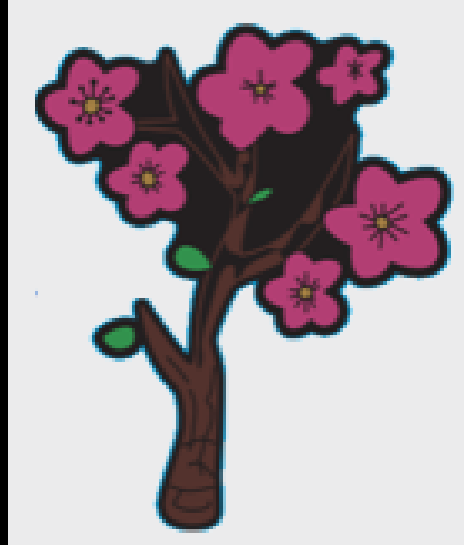
Stop solving for telephony, start solving for agent-assist

Security, compliance, reliability, and sustainability by design

New era of personalization



AWS and Children's National Hospital



"I drew a cherry blossom because I love going to the DC Cherry Blossom Festival in the spring. The care I get at Children's National allows me to do all the things I love and have lots of fun!"

Patient artwork provided by

Zahara

Age 13

Patient with sickle cell

AWS Health Lounge

Connect with **AWS Health experts** and other attendees in our dedicated lounge space for **informal discussions and networking**.

Explore **AWS Healthcare & Life Sciences** demos and new additions to the AWS for Health portfolio!

Location: AWS Industries Networking Lounges, Caesars Forum Main Hall



Thank you!

Jeff Caron
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Barbara Salami
Moderna

Arpita Bhowmick
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Please complete the session
survey in the **mobile app**



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