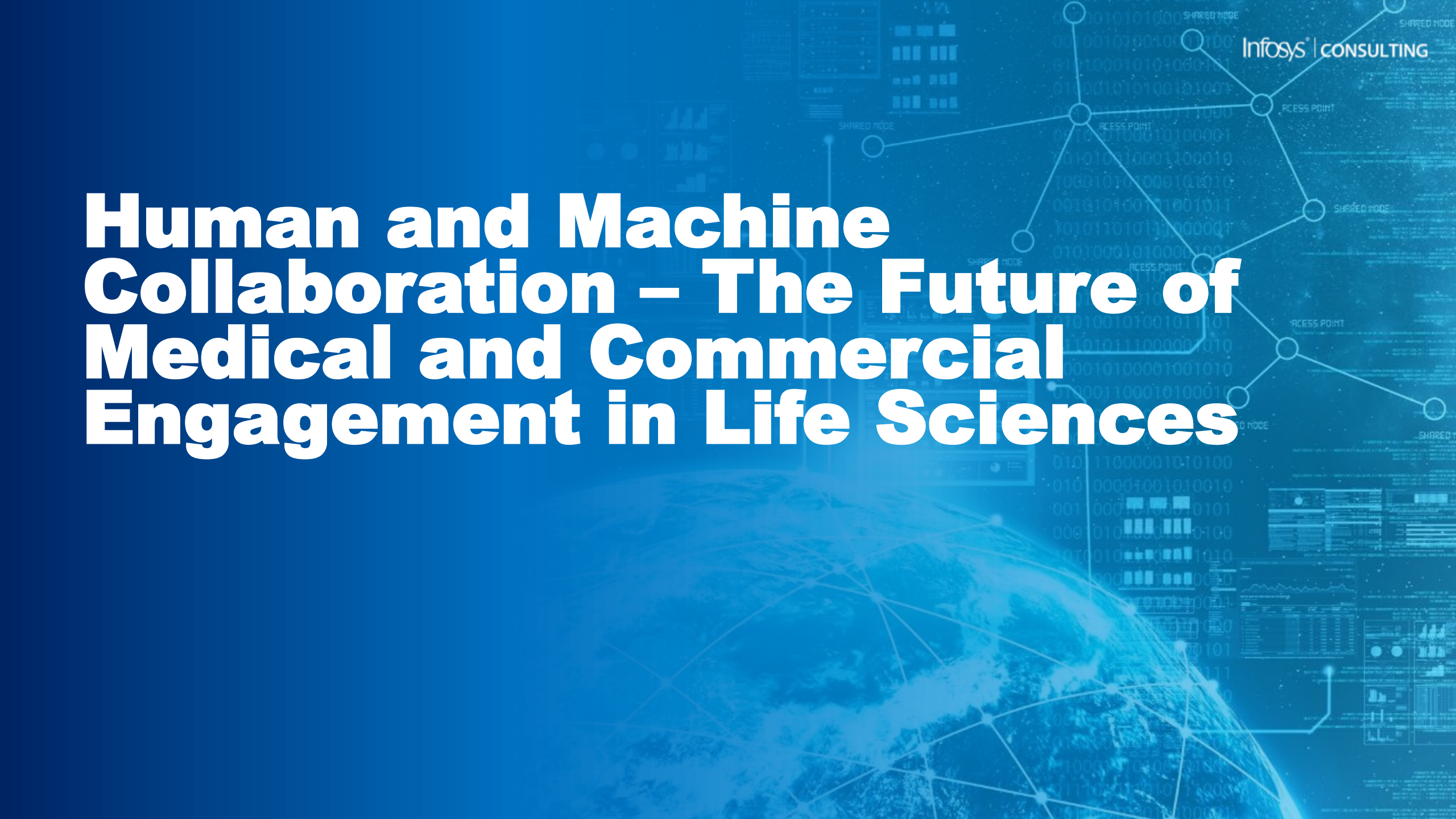# Human and Machine Collaboration – The Future of Medical and Commercial Engagement in Life Sciences

Agenda

Executive Summary

The future of work involves human and machine collaboration. Companies such as Facebook, Netflix, Spotify, Google, Amazon, TikTok, etc. are leveraging AI to enable new modes of engagement, create new experiences, and change the way content is consumed. Life Sciences companies need to account for this new norm and reimagine how they engage with key constituents maintaining ethical standards. Three factors are driving the need to reimagine Medical and Commercial engagement.
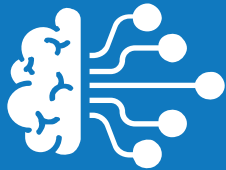
AI-ENABLED ENGAGEMENT	USER EXPERIENCE	HUMAN-LIKE FORMAT

REIMAGINING ENGAGEMENT FOR THE LIFE SCIENCES

AI-enabled capabilities that create a **personalized set of recommended content** which is **tailored to the expectations, needs, habits, and interests** of the user
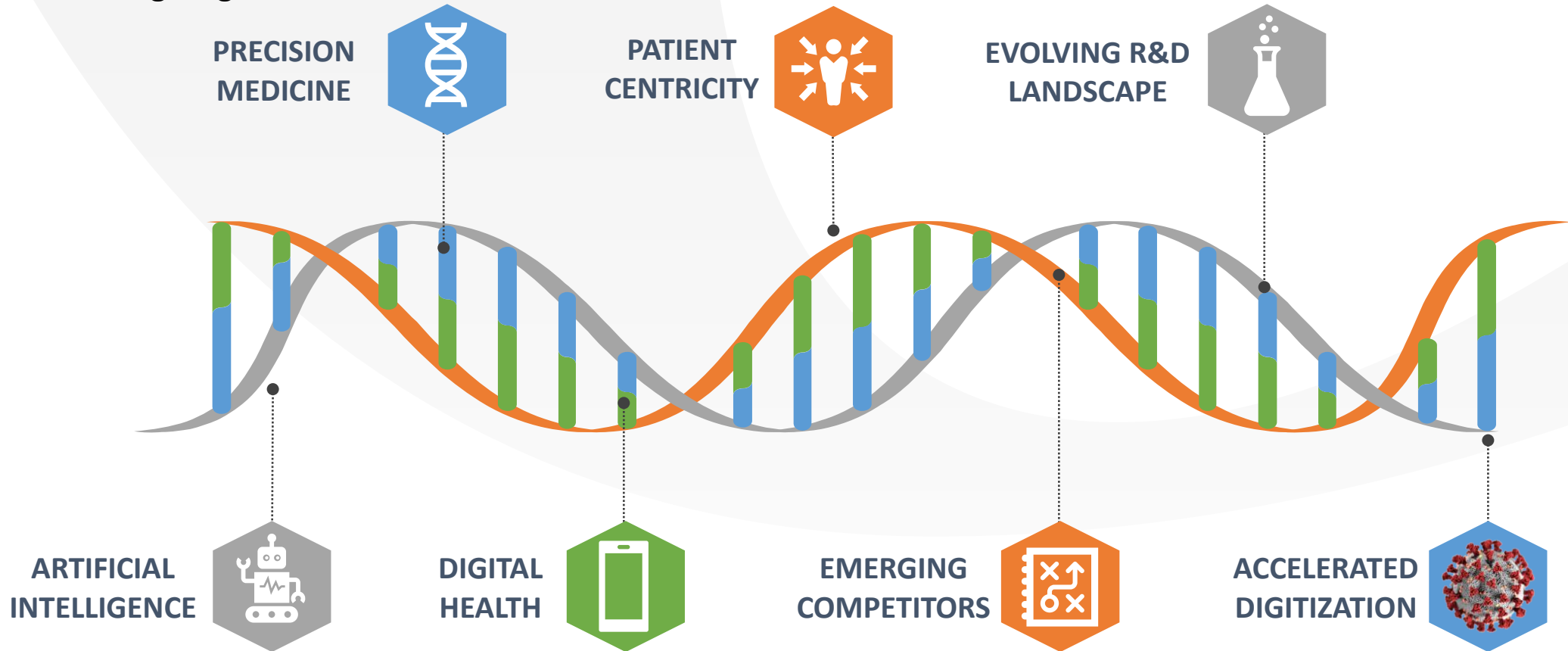
The platform not only **algorithmically anticipates** the information Patients, HCPs, KOLs, and DOLs* desire, but it also **nudges users to explore options and content** that might never have crossed their minds
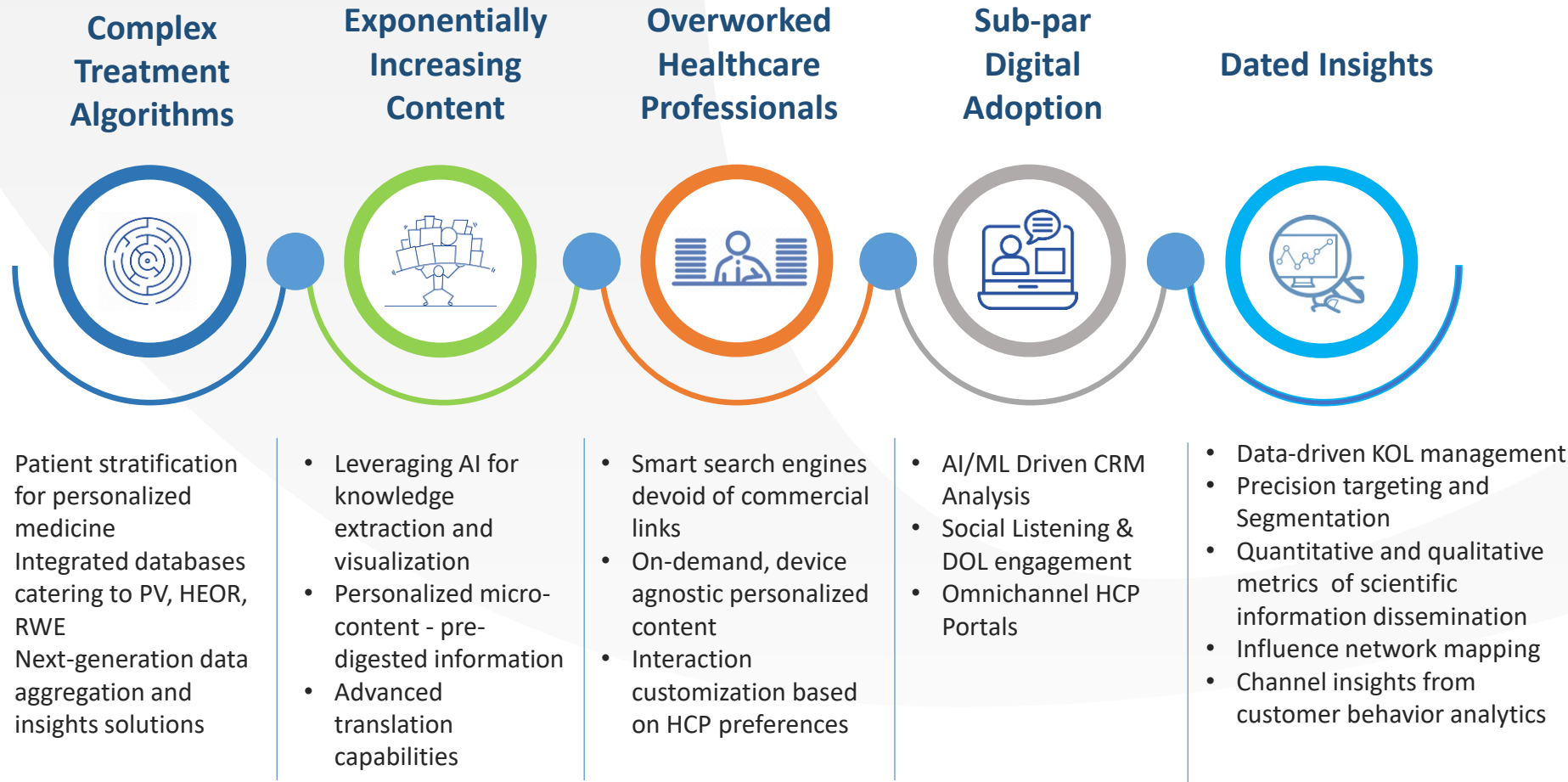
*Digital Opinion Leader

The Life Sciences is an Industry in Transition

Innovation in both digital technology and the biological sciences is advancing at a rapid pace further accelerated by the pandemic. Life Sciences companies need to explain and contextualize the ever-increasingly complex medical science to a diverse range of stakeholders – physicians, patients, and payers. The Medical and Commercial groups are at the leading edge of this transformation.

PRECISION MEDICINE

PATIENT CENTRICITY

EVOLVING R&D LANDSCAPE

ARTIFICIAL INTELLIGENCE

DIGITAL HEALTH

EMERGING COMPETITORS

ACCELERATED DIGITIZATION

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Customer Engagement is Ripe For Transformation

Complex Treatment Algorithms	Exponentially Increasing Content	Overworked Healthcare Professionals	Sub-par Digital Adoption	Dated Insights

Opportunities

• Patient stratification for personalized medicine • Integrated databases catering to PV, HEOR, RWE • Next-generation data aggregation and insights solutions	• Leveraging AI for knowledge extraction and visualization • Personalized micro-content - pre-digested information • Advanced translation capabilities	• Smart search engines devoid of commercial links • On-demand, device agnostic personalized content • Interaction customization based on HCP preferences	• AI/ML Driven CRM Analysis • Social Listening & DOL engagement • Omnichannel HCP Portals	• Data-driven KOL management • Precision targeting and Segmentation • Quantitative and qualitative metrics of scientific information dissemination • Influence network mapping • Channel insights from customer behavior analytics

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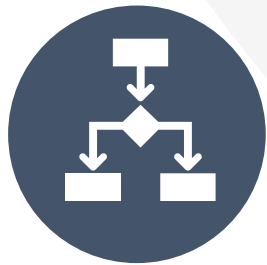
AI-Enabled Engagement

What happens in a world where the digital device in your hand instantly and reliably provides better advice than your most trusted and esteemed colleagues?

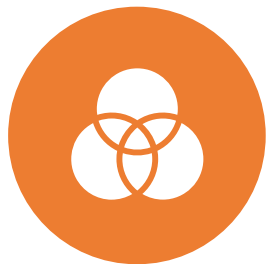## DEEP LEARNING MODELS AID PEOPLE ALONG FOUR KEY DIMENSIONS

DECISION
They help users *decide* what they could or should do next

EXPLORATION
They help users *explore* a variety of contextually relevant options

COMPARISON
They help users *compare* those relevant options

DISCOVERY
They help users *discover* options and opportunities they might not have imagined themselves

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User Experience

Expectations associated with digital engagement have been shaped by our daily interactions with technologies such as Facebook, TikTok, Instagram, Twitter, Google, Amazon, Netflix, and Spotify.

Life Sciences companies need to adopt more personalized and tailored modes of engagement to meet the expectations of patients and medical professionals.

These new modes of engagement will become the de-facto standard in the not-too-distant future.
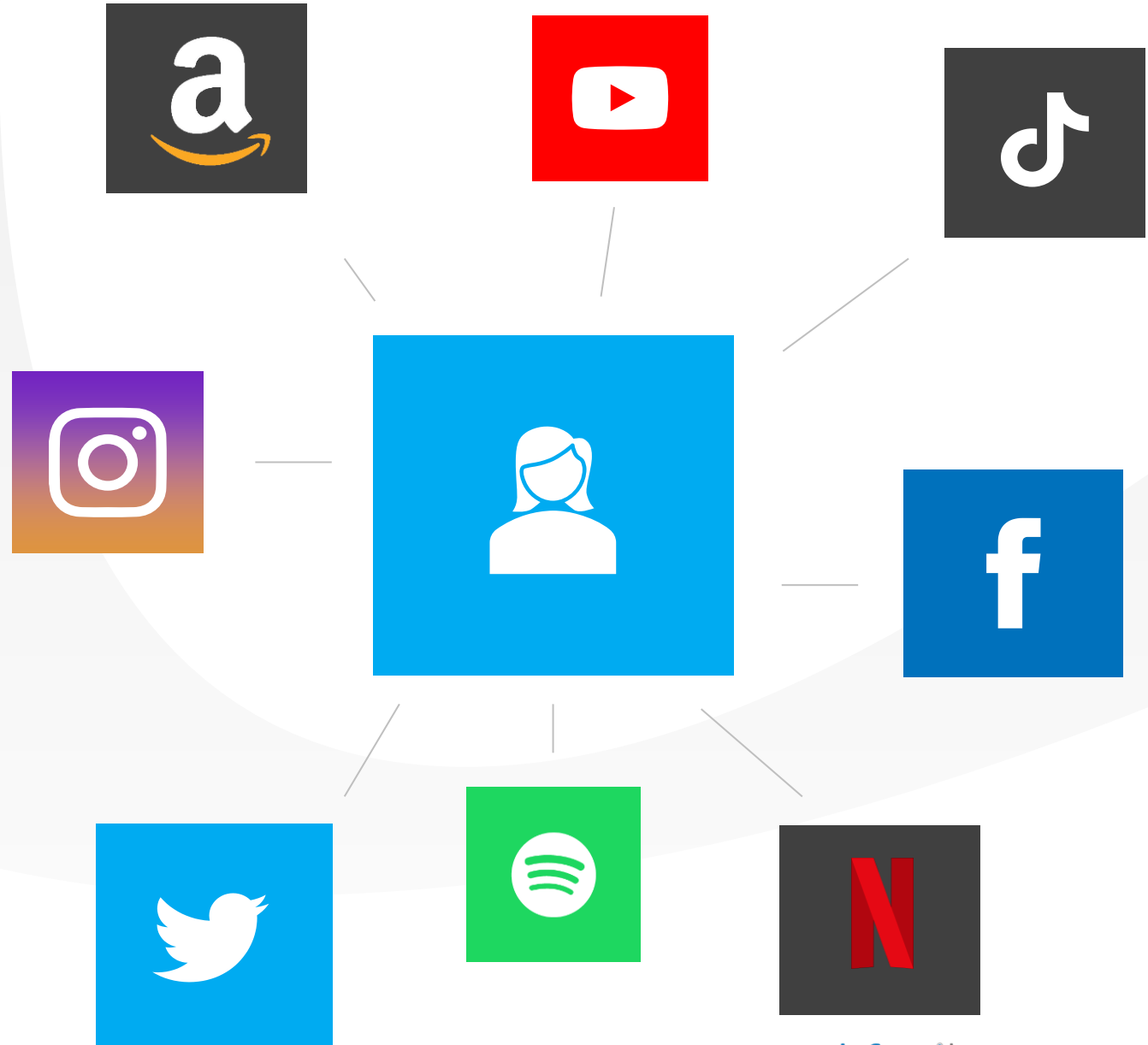
Human-Like Format

Whether using voice assistants, chatbots, virtual agents, or smart speakers, bots are becoming an integral part of our daily lives.

The next wave of experience-oriented artificial intelligence such as augmented and virtual reality, computer vision, and autonomous edge devices will enable new capabilities and modes of engagement.

Embedded into these new user interfaces are the analytics, insights, and intelligence to create more individualized, contextual, and valuable interactions.
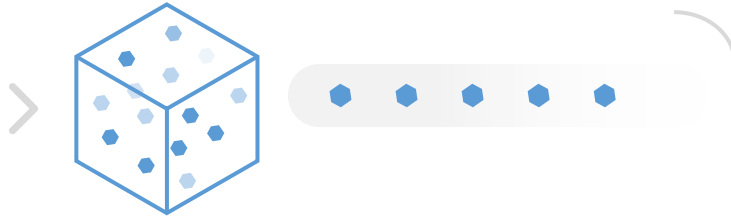
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Reimagining Medical and Commercial Engagement
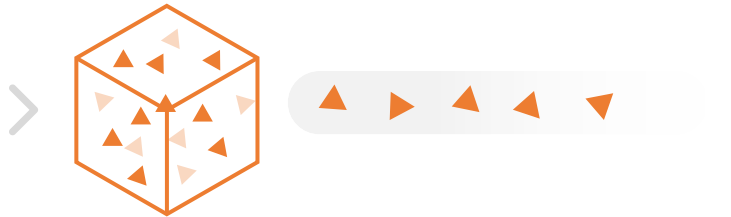
INTERNAL AND EXTERNAL DATA

Product
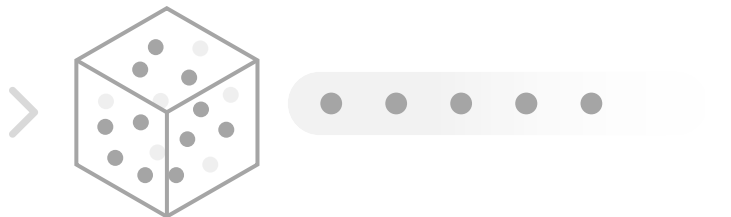Ex: RWD, RWE, Clinical Trials, Therapeutic info

Programs
Ex: Patient Services, KOL & HCP Engagement
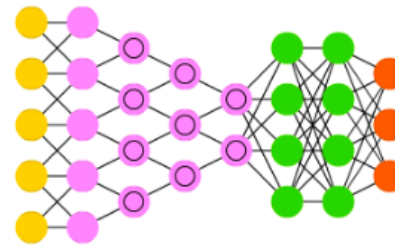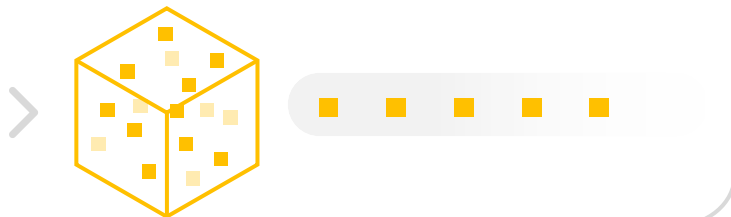
Social Media
Ex: Twitter, Facebook, Blogs, LinkedIn

Events and Publications
Ex: Ad Boards, Conferences, medRxiv, bioRxiv

AI + HUMAN COLLABORATION

Targeted Content
Improved overall engagement effectiveness

Novel Insights
Newer information with collaborated output from internal and external data integration

Quicker and easier to access
Faster access anywhere, to relevant information such as Product details, clinical trial updates, patient services enhancements.

Avoid Data overload
Curated data reducing information overload

Continuous Improvement
Backed by AI algorithms, it will keep on improving and adapting based on more source data and consumption.

Customizable
Potential to customize with integration of additional data sources specific to clients.

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The AI platform has multi-dimensional capabilities that can be deployed to augment existing capabilities and transform external engagement

REIMAGINE MEDICAL ENGAGEMENT

Leverage the AI's capabilities to fundamentally transform how the external Medical and Commercial communities' access and consume content

AUGMENT EXISTING CAPABILITIES

The AI enables the Medical Affairs and Commercial teams to extract meaningful insights from ever-increasing disparate data sources. These insights are key to more effective engagement and interactions across the ecosystem

EXTEND ACROSS THE ECOSYSTEM

Extend the platform to include the patient community. The focus of this engagement model is less scientific in nature and more around the attributes which are meaningful to the patient community

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Managing the Human Aspect of Human and Machine Collaboration

Critical Success Factors to Transform How People Work with Machines

Critical Success Factors

Critical Success Factors	Outcomes
Clear Expectations	→ Know What's Expected
Skills & Tools	→ Effectively Do Their Job
Incentives/Disincentives	→ Rewards & Consequences
Supportive Environment	→ Motivation and Persistence

92%

Of failed transformations are due to "people problems"

FACTORS TO TRANSFORM THAT ENABLE EVOLUTION

Culture
Changing the mindset, priorities, and ways of working in support of AI automation

Organization
Modeling your future workforce structure, processes and people in support of the AI automation strategy

Skills
Identify the skills required to transition the workforce

Knowledge Graphs are a Key Component

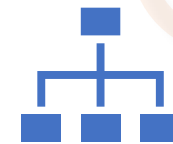Able to handle **huge volumes** of data easily

Flexibility to support different formats such as Pictures, Videos, etc.

Extremely **fast** connections resulting into speedy **performance**

Future proof to work with advances in Analytics, AI, IoT, etc.

Proven track record as successfully used by reputed solutions such as Facebook, Twitter, NASA and more

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