Digital Transformation in Life Sciences: Practical Applications and Global Collaboration through Saudi Arabia's Vision 2030

Dr. Abdulrhman Al Mohammedi, MD, MBA, IAP, KPI
Consultant, Internal Medicine
Academic, Public Affairs & Research Leader, HMG
President – Healthcare Club, MBSC

د.سليمان الحبيب
DR SULAIMAN AL HABIB
medical group المجموعة الطبية

Presentation Roadmap



01
Global Digital Transformation

Current trends and collaborative innovation models reshaping life sciences



02
Evolving Innovation Ecosystems

Shifting from established clusters to emerging global hubs



03
Saudi Arabia's Vision 2030

Strategic investments, partnerships, and infrastructure development

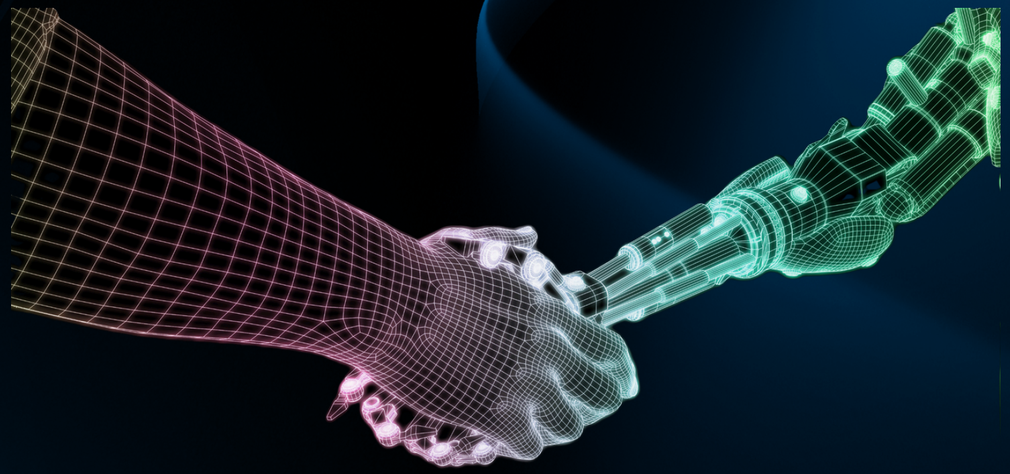


04
Global Collaboration Opportunities

Case studies and actionable partnerships between East and West

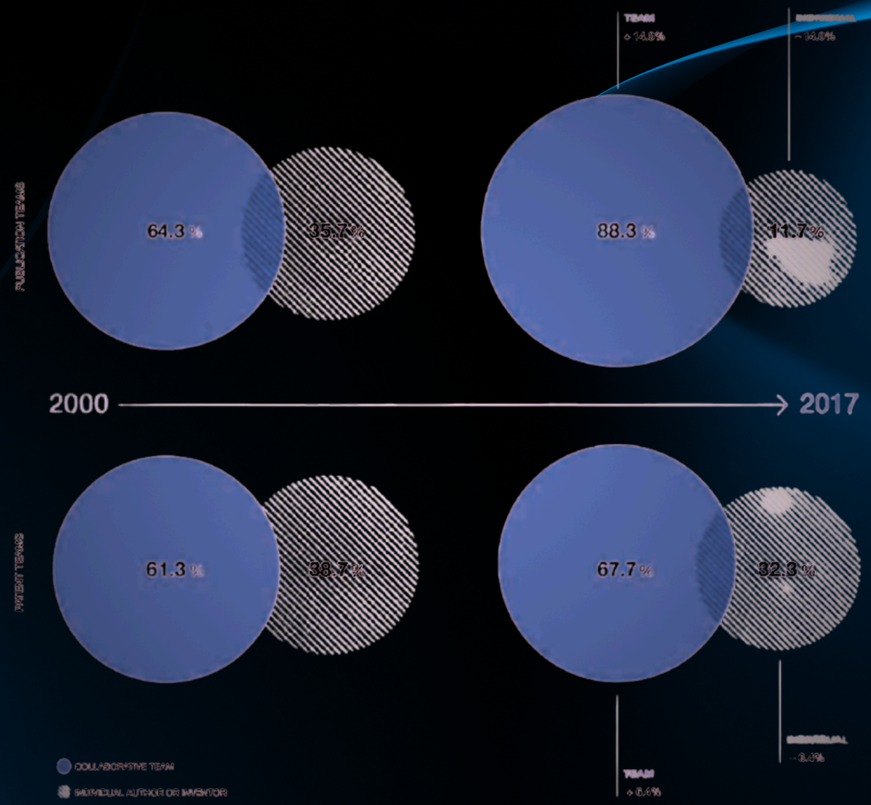
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No nation can transform healthcare alone.



The future of life sciences will be written through collaboration.

Collaboration is the Engine of Innovation



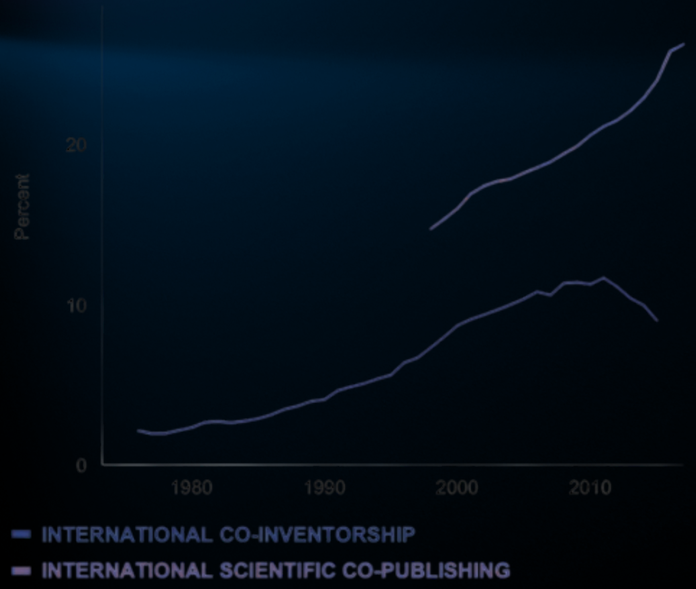
By 2017, nearly 9 out of 10 scientific papers and two-thirds of patents were created by teams — collaboration, not solo effort, is the new global standard in life sciences innovation.

Source: World Intellectual Property Organization (WIPO), 2019

Collaboration is Increasingly International

Collaboration for innovation is increasingly international

Figure 2.7 International co-inventorship and co-publishing, percent



Source: WIPO based on PATSTAT, PCT and Web of Science data (see Box 2.1).
Notes: Int. co-inventorship = share of patents with more than one inventor located in at least two countries; int. co-publications = share of scientific articles with more than one affiliation located in at least two countries. Patent figures based on international patent families.

Cross-border research partnerships have evolved in the life sciences ecosystem.

International collaboration enables:

- Sharing of research infrastructure costs
- Access to diverse patient populations
- Accelerated regulatory pathways
- Pooling of specialized expertise
- Expanded market opportunities

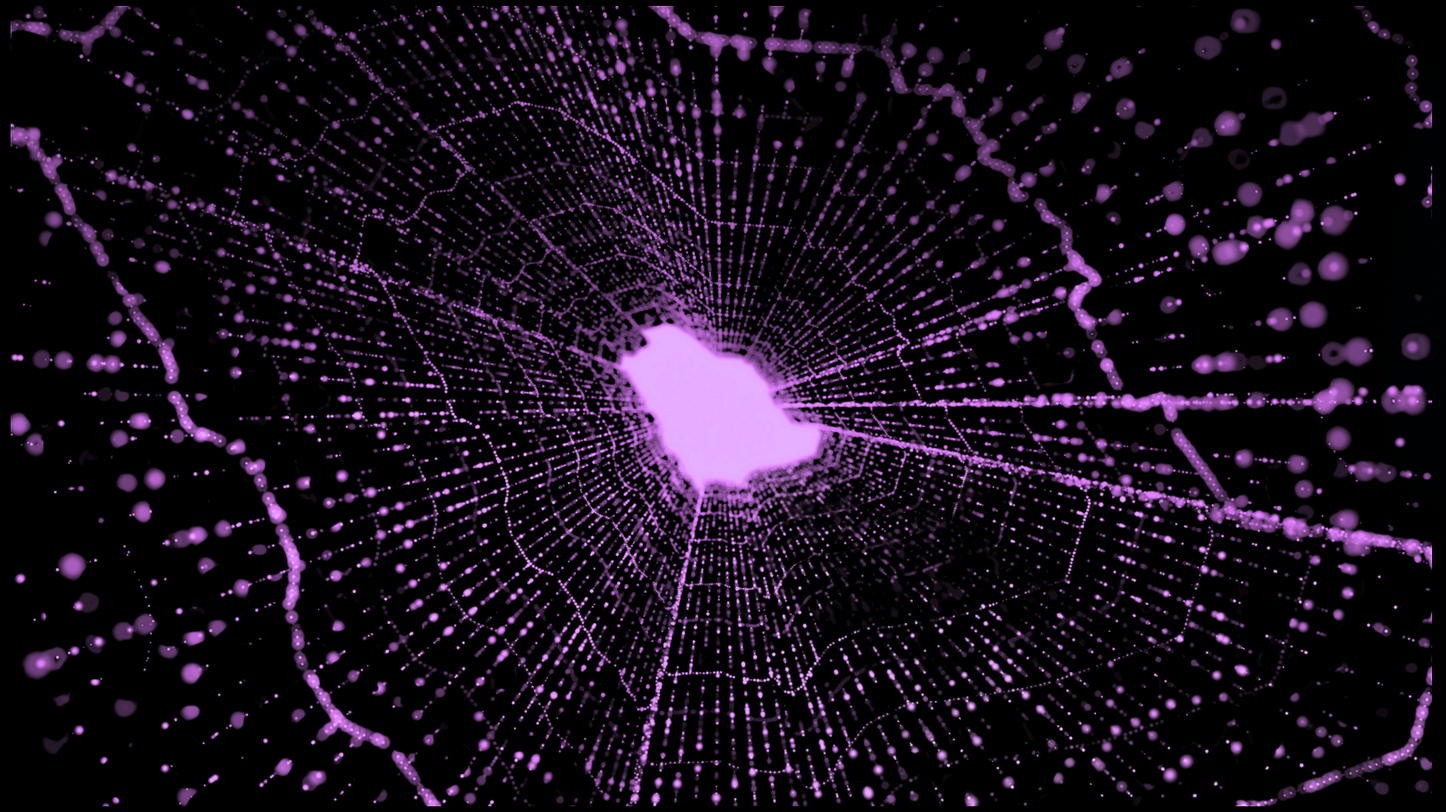
Top 5 Europe–Saudi Arabia Life Sciences Collaborations.

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Source: Digital Transformation in Life Sciences, Milan 2025 – Dr. Abdulrhman Al Mohammedi

Is Saudi Arabia the Next Global Hub



for Life Sciences under Vision 2030?

Saudi Arabia: Building the Next Hub for Life Sciences Innovation



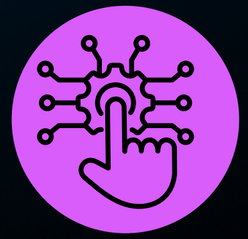
USA, and China still lead life sciences. But Saudi Arabia, through Vision 2030, is fast emerging as the next hub

The Four Pillars of Saudi Arabia's Life Sciences Transformation



01
Vision 2030 Investments

Billions allocated for R&D, artificial intelligence, and biotechnology development across the Kingdom



02
Healthcare Transformation

Smart hospitals, integrated digital health platforms, and AI-powered care delivery systems



03
Global Partnerships

Strategic collaborations with Harvard, global pharmaceutical companies, and international innovation ecosystems



04
Talent & Infrastructure

New research academies, state-of-the-art centers, and purpose-built innovation hubs

Vision 2030: Accelerating Life Sciences

01

R&D Acceleration

R&D spending hit $6B in 2023, with 49K researchers—Saudi Arabia accelerating knowledge-driven growth.

02

Biotech & Pharma Growth

Saudi Arabia launched its National Biotechnology Strategy in 2021 to drive local production and healthcare innovation.

03

Global Partnerships

Strategic collaborations with Harvard, Mayo Clinic, AstraZeneca, and pioneering biotech firms in NEOM and Riyadh

04

Digital Health Leadership

Saudi ranked among the world's top 10 for digital government (UN e-Gov Index 2022) — accelerating AI & telemedicine integration in healthcare delivery

Sources: vision2030.gov.sa

Evidence of Transformation



R&D Momentum

Saudi Arabia increased R&D spending to $6.02 billion in 2023, a 17.4% year-over-year rise, supporting expanded research capabilities and talent development



National Biotechnology Strategy

2024 biotech push: vaccines, genomics, plant sciences — $266M Vertex deal to position KSA as global hub by 2040



Digital Health Leadership

The "Seha Virtual Hospital" connects **224 hospitals** with 44 specialized services—earning recognition as the **world's largest virtual hospital** in 2024



E-Government Excellence

Saudi Arabia **ranked 6th globally** on the UN e-Government Development Index (**EGDI**) in 2024, reflecting robust digital infrastructure that catalyzes healthcare innovation

Sources: The Executive Centre, Arab News, Labiotech.eu, UNESCAP

Transformative Initiatives Reshaping Life Sciences

SDAIA
الهيئة السعودية للبيانات والذكاء الاصطناعي
Saudi Data & AI Authority



HUMAIN
THE END OF LIMITS.

National Investments

Vision 2030 and SDAIA are driving AI, data, and R&D to modernize Saudi healthcare.

Infrastructure Development

NEOM: Futuristic $500B hub driving biotech, health, and research innovation.

Private Sector Leadership

Humain: Saudi's AI hub, backed by PIF, driving infrastructure and global partnerships for life sciences R&D.

Sources: The Executive Centre, Arab News, Labiotech.eu, UNESCAP

International Collaboration Framework



Strategic Alliances

Saudi Arabia is building global partnerships — Harvard, Mayo, AstraZeneca, Siemens, Philips — to fuel life sciences innovation.

Source: Saudi Ministry of Investment



Clinical Research & Trials

Saudi Arabia is expanding multi-center clinical trials with SFDA support and partnerships in oncology, genomics, and AI.

Source: ClinicalTrials.gov



Knowledge Transfer

Through Vision 2030, Saudi invests in joint R&D, talent exchange, and tech localization with global pharma and medtech

Source: Vision 2030 Health Sector Transformation Program

Sources: The Executive Centre, Arab News, Labiotech.eu, UNESCAP

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“Our greatest treasure isn’t any resource—it’s our people: their ambition, their talents, and their drive to shape our future.”

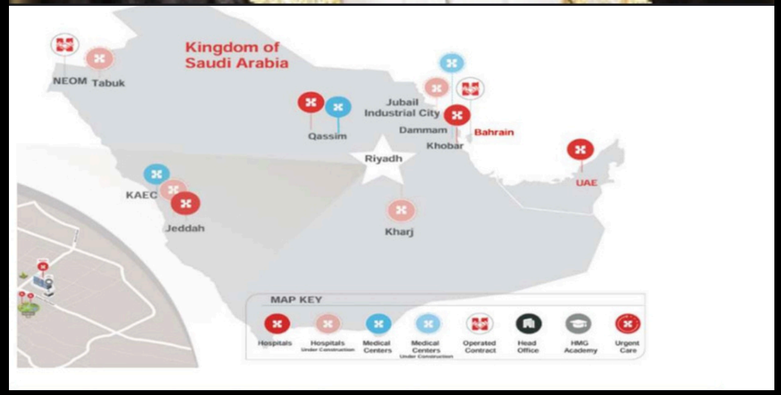
— Crown Prince Mohammed bin Salman

Dr. Sulaiman Al Habib: Shaping Healthcare Excellence & Innovation in the Middle East

From Visionary Physician to Regional Healthcare Leader

- Founded 1995 – Saudi physician & entrepreneur
- Largest private healthcare group in MENA: 20+ hospitals across KSA, UAE & Bahrain
- 20,000+ staff, 3,000+ physicians
- major healthcare IPO (2020)
- Leader in excellence, AI & digital health
- Driving research, innovation & Vision 2030 transformation





Case Example: Innovation in Practice at HMG



3D Printing & AI

transforming patient care with personalized, tech-driven solutions.



Robotic Surgery Simulation

training the next generation of surgeons with cutting-edge simulation tools.

Livecare(Telemedicine)

expanding access to care through digital connectivity.



Smart Room Systems

Patient Experience Tech makes healthcare more human, efficient, and personalized.

Case Example: Innovation in Practice at HMG



Global AI Hackathon (Harvard & MBSC)

Saudi's first Harvard Innovation Hackathon, 222 professionals, 28 teams, 5th globally, 3 winners to Harvard Bootcamp.



Innovation Education (Learning Café)

HMG launched innovation platforms across 22 hospitals, fostering intrapreneurship and co-creating healthcare transformation.



High Innovation Hub

advancing breakthrough ideas into real-world applications.



Robotics Lab

pioneering robotic technologies in healthcare.

as Innovation drives us, but a patient’s smile defines us.



“The future of life sciences will not be built in isolation — it will be written through collaboration, and Saudi Arabia is ready to lead.”

Thank you

