

Healthcare & Biotech Ecosystem

Mapping the Global Players
and Innovation Landscape

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The Healthcare Value Chain

Basic Research

Universities, research institutes, government labs

Drug Discovery & Development

Biotech companies, pharmaceutical firms

Clinical Trials

CROs, academic medical centers, hospitals

Manufacturing

CMOs, in-house facilities, specialty manufacturers

Distribution

Wholesalers, pharmacy benefit managers, specialty pharmacies

Healthcare Delivery

Hospitals, clinics, physicians, digital health platforms

The Healthcare Value Chain

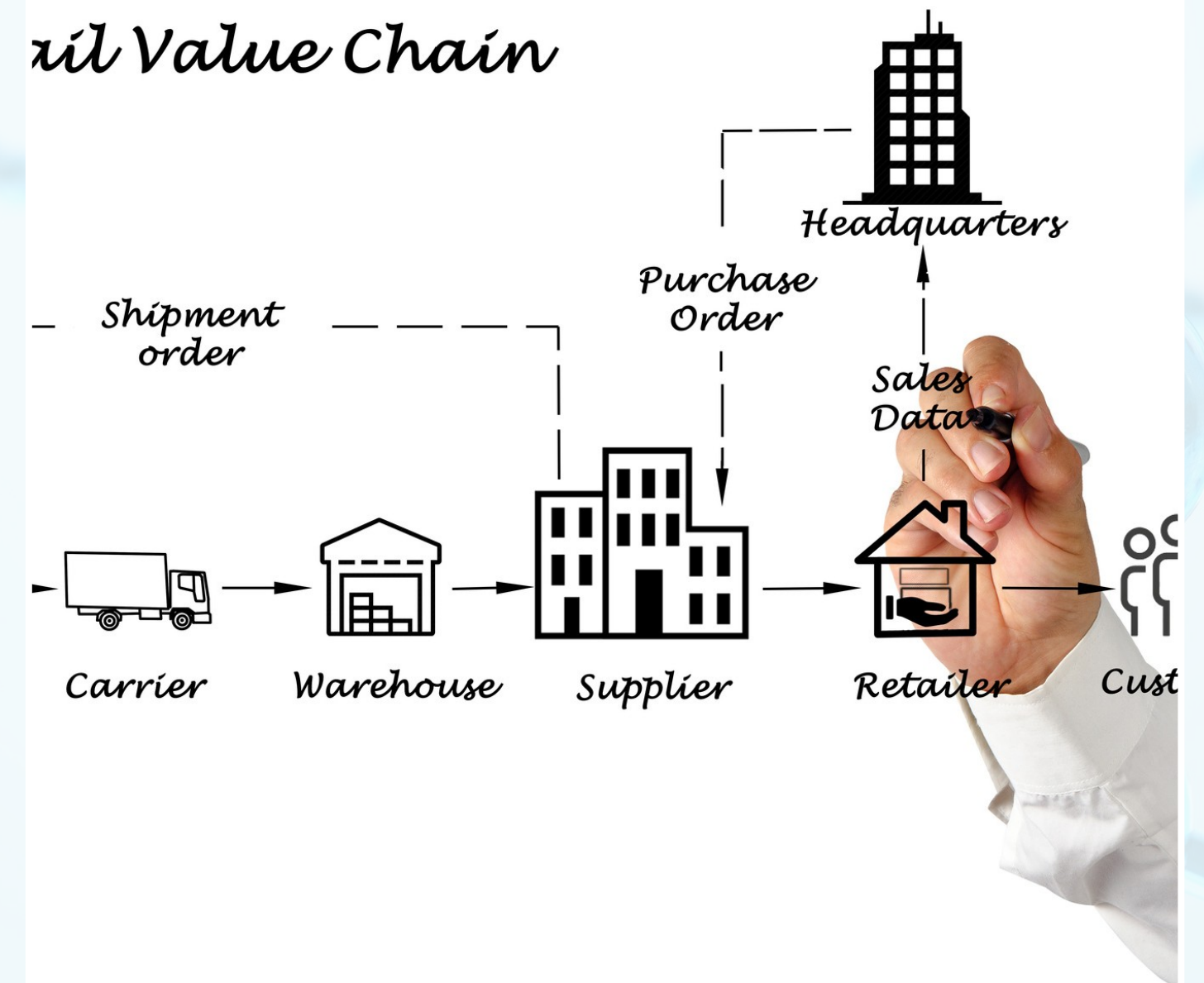
Payers

Insurance companies,
government programs,
employer plans

**For entrepreneurs:
knowing the payer landscape helps you
understand who will pay for your product
and how much they'll pay**

Understanding where value is created and captured is essential for positioning your venture.

Value Chain



The Biotech Ecosystem Map

Core Innovation:

Biotech startups,
pharmaceutical
companies, academic
institutions



Enablers:

CROs (Contract Research
Orgs), CDMOs (Contract
Development &
Manufacturing Orgs),
research tools companies,
AI/data platforms



Capital Providers:

VCs (Venture Capital),
corporate venture,
government grants,
foundations



The Biotech Ecosystem Map

Regulators:

FDA (Food & Drug Admin), EMA (European Medicines Agency), national agencies, ethics committees



Healthcare Delivery:

Hospitals, physicians, pharmacies, patients



Payers:

Insurance companies, government programs, employer plans



No company
operates in isolation
—partnerships and
collaborations are
essential.



Big Pharma – The Industry Giants

- **Characteristics:**

Large R&D budgets, global operations, diverse pipelines

- **Examples:**

Pfizer, Roche, Novartis, Johnson & Johnson, Merck

- **Strengths:**

Financial resources, regulatory expertise, commercial infrastructure, global reach

- **Challenges:**

Innovation gaps, patent cliffs, high costs, slow decision-making

- **Role in Ecosystem:**

Acquirers of biotech companies, R&D partners, licensing partners



The opportunity

Big pharma companies have shifted from pure in-house R&D to a model of acquiring or partnering with innovative biotech companies. This creates opportunities for startups with promising technologies. Understanding pharma's needs is key to successful exits.

Biotech Companies – Innovation Engines

- **Focus:** Novel therapeutics, platform technologies, specialized modalities
- **Size Range:** From pre-clinical startups to established companies
- **Examples:** Moderna, BioNTech, Regeneron, Vertex, Genentech (pre-acquisition)
- **Business Models:** Product development, platform licensing, technology services
- **Typical Path:** VC funding → clinical trials → partnership/acquisition or IPO



Medtech Companies – Medical Devices & Diagnostics

- **Sectors:**

Medical devices, diagnostic equipment, surgical instruments, digital health devices

- Examples: Medtronic, Abbott, Boston Scientific, Siemens Healthineers, Intuitive Surgical
- Differentiators: Shorter development cycles than drugs, different regulatory pathways, recurring revenue models
- Revenue Models: Device sales, consumables, service contracts, data/software subscriptions
- Market Dynamics: Established players, acquisition opportunities, innovation in digital integration

Academic Institutions – Research Foundations

- **Role:** Basic research, talent development, technology transfer
- **Key Players:** MIT, Stanford, Harvard, Cambridge, Oxford, Technion, Weizmann Institute
- **Mechanisms:** Tech transfer offices, spinouts, licensing, collaborative research
- **Resources:** Grants, facilities, expertise, clinical access
- **Entrepreneur Value:** Access to IP, founding scientists, validation, networks



Academic institutions are the source of many breakthrough discoveries.

Understanding how to work with tech transfer offices, license IP, and recruit scientific founders is crucial.

Many successful biotechs have academic origins.

Contract Research Organizations (CROs)

- **Services:** Clinical trial management, regulatory support, data management, site selection
- **Major Players:** IQVIA, PPD (Thermo Fisher), Syneos Health, ICON, Parexel
- **Value Proposition:** Expertise, global reach, cost efficiency, speed
- **For Startups:** Essential partners for conducting trials without building internal capabilities
- **Evolution:** Moving toward data analytics, real-world evidence, decentralized trials

CRO

CROs have become essential to the biotech ecosystem. They allow small companies to run complex global trials without massive internal infrastructure. Choosing the right CRO partner is a critical decision that impacts both timeline and cost.



Contract Development and Manufacturing Organizations (CDMOs)

- **Services:** Process development, manufacturing, fill-finish, quality control
- **Examples:** Lonza, Catalent, Samsung Biologics, WuXi Biologics, Thermo Fisher
- **Importance:** Enable biotech companies to scale without building facilities
- **Considerations:** Capacity, technology platforms, geographic location, cost
- **Trends:** Cell and gene therapy capabilities, continuous manufacturing, AI integration



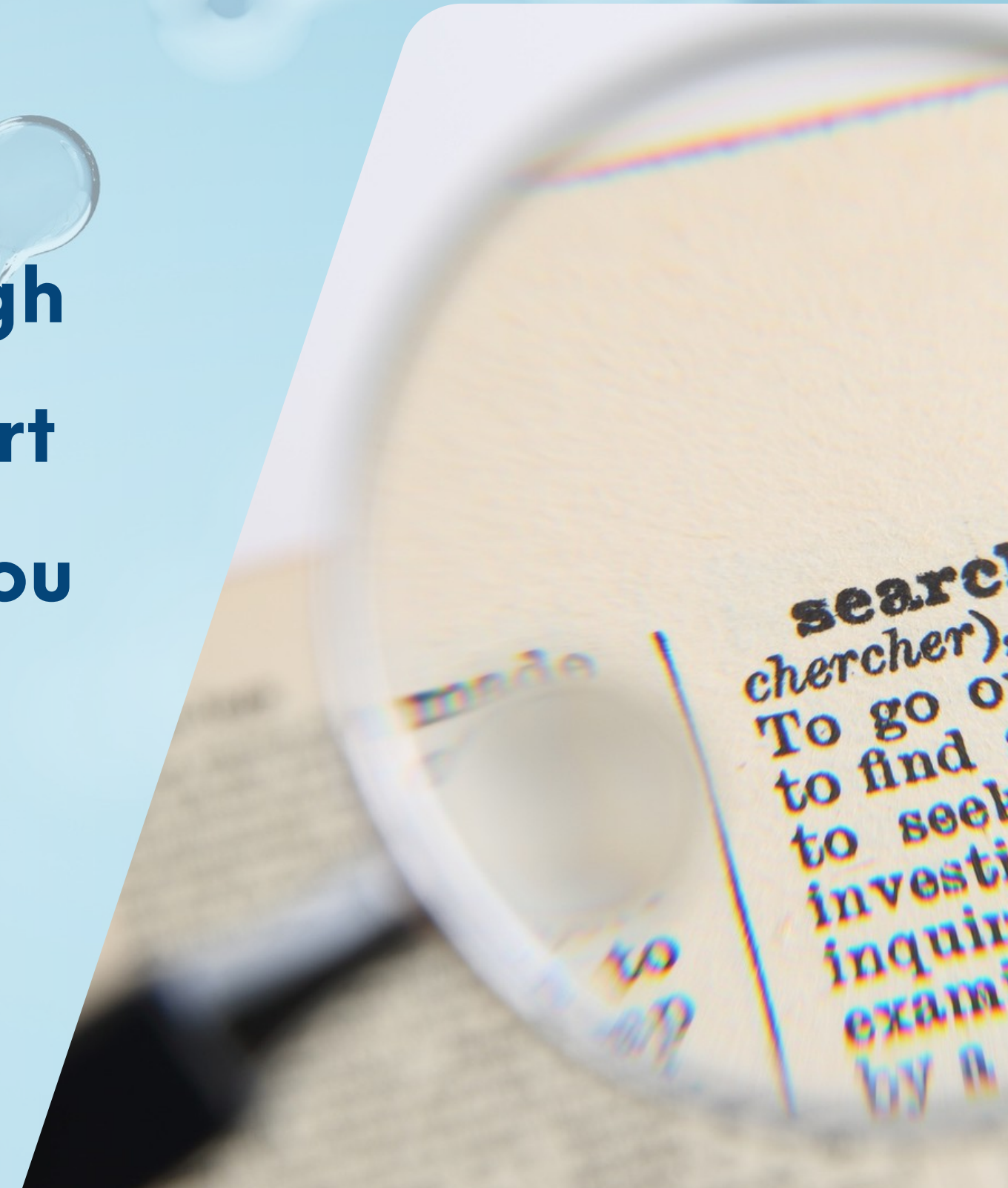
Venture Capital – Fueling Innovation

- **Specialized Biotech VCs:** Flagship Pioneering, Versant Ventures, Atlas Venture, OrbiMed, RA Capital
- **Investment Stages:** Seed, Series A, Series B+, growth
- **Typical Investment:** \$5M–\$100M+ depending on stage
- **What They Look For:** Strong science, experienced team, large market, clear path to value
- **Value Beyond Money:** Network, strategic guidance, follow-on funding



Venture Capital – Fueling Innovation

Biotech VCs have scientific expertise to evaluate your technology and invest through trusted relationships, not cold pitches—start building connections 6-12 months before you need funding



Corporate Venture Capital (CVC)

- Examples: J&J Innovation, Novartis Venture Fund, Pfizer Ventures, Roche Venture Fund
- Motivations: Access to innovation, strategic alignment, potential acquisitions
- Advantages: Industry expertise, partnership opportunities, validation
- Considerations: Strategic fit required, potential conflicts, longer decision processes
- Typical Role: Co-investors with financial VCs



Government Funding and Grants

- **NIH:** Small Business Innovation Research / Small Business Technology Transfer – \$150K–\$2M+ for US companies
- **ERC and Horizon Europe:** European Research Council – EU research funding
- **National Innovation Agencies:** Israel Innovation Authority, Innovate UK, others
- **BARDA:** Biomedical Advanced Research and Development Authority – US biodefense and pandemic preparedness
- **Disease Foundations:** Michael J. Fox Foundation, Gates Foundation, others

Advantages: Non-dilutive, validation, can attract VC



European Research Council
Established by the European Commission



National Institutes of Health
Turning Discovery Into Health

רשות החדשנות
Israel Innovation
Authority

The logo for the Israel Innovation Authority, featuring a stylized geometric design with arrows pointing in various directions.

Regulatory Bodies – Gatekeepers

- **FDA:** Center for Drug Evaluation, Center for Biologics, Center for Devices
- **EMA:** Centralized approval for EU market
- **Other Key Agencies:** PMDA (Japan), NMPA (China), Health Canada, Swissmedic
- **Functions:** Safety evaluation, efficacy assessment, manufacturing oversight, post-market surveillance
- **Entrepreneur Impact:** Timeline driver, cost factor, strategic planning essential



Regulatory Bodies – Gatekeepers

Understanding regulatory pathways early is critical. Engaging with regulators through pre-IND meetings and scientific advice can save time and resources.



Payers and Reimbursement

- **Types:** Government, private insurance, employer-sponsored
- Decision Factors: Clinical evidence, cost-effectiveness, budget impact, unmet need
- Reimbursement Models: Fee-for-service, bundled payments, value-based care, outcomes-based

Startup Relevance:
Plan for reimbursement strategy from
early development



Identifying Your Position in the Ecosystem

Questions to Consider:

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- A red pushpin is stuck into a map of a region, likely in Israel, with labels for "Leach Islet", "Akko", "Haifa", and "Lake Superior". The pushpin is positioned on the left side of the map, pointing towards the center.
1. What value chain stage are you targeting?
 1. Who are your potential partners versus competitors?
 1. Which ecosystem players do you need relationships with?
 1. Where should you be located for optimal access to resources?
 1. What funding sources match your stage and needs?
 1. Who are the key opinion leaders in your space?
 1. What regulatory pathways will you navigate?

Different Stages = Different Business Models:

Stage	Capital Needed	Timeline	Exit Strategy
Discovery	\$10-50M	3-5 years	License to pharma or get acquired
Clinical Trials	\$100-500M	5-10 years	Acquire after Phase 2 or IPO
Manufacturing	\$50-200M	2-4 years to build facility	Ongoing business, less acquisition
Digital Health/Delivery	\$5-50M	1-3 years	Acquisition by health system or insurer